Gil Michael Regalado (bangonkali)



I'm a technology generalist with technical exposure spanning fundamental sciences, electrical and microelectronics engineering, industrial and business processes, and information and operational technology. I have worked at Netzon Group since 2018 and, as Chief Technology Officer since April 2026, direct strategy across FinOps, DevSecOps, IT operations, AI and machine learning, data mining, data engineering, and software engineering.

GitHub Stack Overflow LinkedIn YouTube Website and current record

Contents

Work experience : Public projects : Skills : Credentials : Publications : Education : Awards : Presentations : Writing : Chronology : Complete Library : Reviewed public activity : References

Work Experience

Netzon Group

Chief Technology Officer

Philippines

Responsible for technical direction, system architecture, prototypes, and platform and infrastructure decisions across client products.

- Direct strategy across FinOps, DevSecOps, IT operations, AI and machine learning, data mining, data engineering, and software engineering.
- Shape architecture proposals, prototypes, engineering standards, and platform decisions with teams, clients, and partners.

Stack: System architecture, FinOps, DevSecOps, AI/ML, Data engineering, Cloud infrastructure

April 2026-present

Netzon Global Tech Inc. / Netzon Group

Technical Manager / Head of Development · Full time

Davao, Philippines

Led software, DevOps, and test engineering work on healthcare and retail applications, BLE Mesh integration, energy storage, AI applications, and cloud infrastructure.

- Led cross-functional software, DevOps, and test teams in the design, development, architecture, and support of healthcare information systems, AI/ML integrations, augmented-reality retail applications, BLE Mesh automation, energy storage, and Swedish information platforms.
- Directed technical strategy, architecture, frameworks, infrastructure choices, and stakeholder communication across technical and executive groups.
- Led migrations to self-hosted and managed Kubernetes in hybrid and cloud environments, including machine-learning integrations.
- Prepared architecture prototypes and reusable development templates, and handled engineering administration and management.
- Participated in Air Spirometer, a Netzon mobile platform developed with Novartis and POND Healthcare Innovation for respiratory monitoring, and Hope, co-developed with ADDI Medical to collect and manage patient health information.
- Contributed to Detail Online's retail-visibility platform, web crawling, data processing, and AI capabilities, and Shopt with CPM for retail field-team reporting, tasks, photographs, and visit information.

Stack: MongoDB, PostgreSQL, MySQL, Cloudflare, Angular, Flutter / Dart, React Native / TypeScript, FastAPI / Python, ASP.NET Core / C#, TensorFlow, Langflow, Semantic Kernel, Promptflow, Ragflow, Amazon Bedrock, Azure AI Foundry, Google Gemini / Vertex AI, AssemblyAI, ElevenLabs, AWS, Google Cloud, Azure, Linode, OVH, VMware private cloud, Kubernetes, K3s, GitLab, Protocol Buffers, Kotlin, Swift

February 2018-April 2026

High Output Ventures

Software Engineer · Home based

Singapore

Built Node.js microservices for messaging and CRM integration using MongoDB, RabbitMQ, and Amazon SQS. Deployed containers on AWS and DigitalOcean.

- Developed Node.js microservices for Facebook Messenger, Gmail, contact management, and CRM integration using MongoDB and RabbitMQ.
- Deployed Dockerized infrastructure across AWS and DigitalOcean, managed through Portainer.
- Designed a hybrid service bus with Amazon SQS for third-party integrations and delivered an MVP in an agile environment.

Stack: MongoDB, React, FlowJS, Nodejs, SocketIO, RabbitMQ, Amazon SQS, Docker, Portainer, AWS, DigitalOcean

15 April 2017-31 January 2018

Emerson Process Management · PlantWeb Solutions Group

Software Developer

Pasig City, Philippines

Designed and developed Industrial Internet of Things solutions and Distributed Control Systems software, with quality assurance, performance testing, and compliance testing.

- Designed and developed software for Industrial Internet of Things solutions and the Distributed Control Systems product line.
- Participated in quality assurance, performance testing, and compliance testing.
- Developed MFC C++, C# WinForms, and ASP.NET applications.

Stack: MFC C++, C#, WinForms, Angular 1, MS SQL, ASP.NET

8 August 2016-30 March 2017

Emerson Process Management · PlantWeb Solutions Group

Test Automation Engineer

Pasig City, Philippines

Developed hardware and software test automation using C#, Python, OpenCV, and a distributed test framework backed by RabbitMQ.

- Designed automated test systems for prototype, in-development, and legacy hardware and software products.
- Used Visual Studio CodedUI, MSAA, UI Automation in C#, and Selenium for product and browser automation.
- Integrated OpenCV image verification and developed a reusable test framework for automation and test engineers.

Stack: Python, Sikuli, OpenCV, C#, MSTest, C++ UI Automation, Selenium, MS SQL, TFS, RabbitMQ

28 May 2014-8 August 2016

Emerson Process Management · PlantWeb

Intern Test Engineer · College internship

Pasig City, Philippines

Supported DeltaV testing and a test rig connecting distributed control systems, PLCs, and Rosemount sensors.

- Assisted the DeltaV Distributed Control Systems test-engineering team with DCS and PLC hardware, Rosemount sensors, and their software.
- Helped design and implement a test rig integrating multiple control systems, PLCs, and sensors during the college internship.

Stack: C# WinForms, PLC programming, DCS programming, MATLAB

April-June 2013

City Social Welfare and Development Office · Iligan City

Freelance IT Personnel · Home based / freelance during college

Iligan City, Philippines

Developed a PHP/MySQL application with map integration for evacuation-center population monitoring after Typhoon Sendong.

- Developed and deployed the population-tracking application within three days of the Sendong response, supporting seven evacuation centers.
- The system handled more than 100,000 records and organized information used by local government and international partners including IOM and the UN.

Stack: AWS EC2, MySQL, CodeIgniter, Yii, PHP, JavaScript, HTML, Google Maps

18 December 2011-March 2012

Public Projects

Dash: a project-management workspace

Systems & platforms · Project date not recorded

A React and TypeScript project-planning tool with tasks, progress, Gantt charts, and simple resource management.

Project developer

Project planning

Dash was developed for waterfall-style projects that did not require a dedicated Trello, Jira, or Microsoft Project subscription. It tracks tasks, progress, Gantt charts, and simple resource allocation.

Application architecture

The application does not require its own backend. Project files can be saved in a personal OneDrive or Office 365 directory. Its architecture explored a substantial client application, state management, and integrations, with draw.io as an inspiration. The tool was developed for work and made public.

Tools: React, TypeScript, OneDrive, Office 365, Gantt charts

Waning: React and browser graphics

Systems & platforms · 2020 demonstrations

A proof of concept combining React interfaces with a 3D scene rendered in a separate browser thread.

Prototype developer

Rendering experiment

Waning explored the feasibility of a web-based 3D environment for game development. Its central question was how a React interface could coexist with a canvas rendered on a separate thread. The paired demonstrations compare main-thread and worker rendering.

Tools: React, TypeScript, 3D graphics, Web Workers, Canvas

Espressif wireless-controller integration

Electronics & embedded systems · 2016 demonstration

An Arduino-library proof of concept for a Wi-Fi controller using an Espressif device.

Hobby project developer

Wireless control

The experiment implements a wireless controller with the Arduino library. It connects occasional electronics work with an interest in real-time web interfaces and is documented in the ESP8266 demonstration.

Tools: ESP8266, Wi-Fi, Arduino, Digital design

Overwatch: distributed image verification

Systems & platforms · Emerson test-automation work

An internal Emerson testing framework exposing OpenCV image analysis to C# test-automation clients.

Framework developer

Distributed verification

A C# NuGet API extended traditional text-based automation with image-based verification. Python workers exposed OpenCV operations through a RabbitMQ message queue, distributing image-analysis tasks from CodedUI, UI Automation, and MSAA clients. Additional workers could be added to scale the image-analysis workload.

The reusable architecture separated automation clients from image-analysis workers, allowing independent scaling and reuse across test systems.

Tools: OpenCV, Python, C#, NuGet, RabbitMQ, CodedUI, UI Automation, MSAA

Early Node.js packaging for Windows

Systems & platforms · 2011 demonstrations

An early Windows installer and real-time messaging demonstrations from before official Windows support became established.

Independent developer

Windows packaging

The project made early Node.js builds more accessible to Windows users through an installer and demonstrations. The installer received approximately 7,000 downloads over four months before official Windows support developed. The Google Code archive and contemporaneous chat recordings retain the project context.

Tools: Nodejs, Windows, SocketIO, JavaScript

jVerilog: a small Windows Verilog IDE

Microelectronics & HDL · 2011 demonstration

A graphical wrapper around the Windows port of Icarus Verilog for a compact compilation and simulation workflow.

Tool author

A compact HDL workflow

jVerilog provides a small user interface around Icarus Verilog on Windows. The demonstration shows a simple integrated workflow for working with Verilog rather than requiring each compilation and simulation step to be invoked separately.

Tools: Icarus Verilog, Verilog, Windows

Cubieboard: Linux, vision and GPIO

Electronics & embedded systems · 2013 demonstrations

Embedded Linux experiments on Cubieboard 2, including webcam face detection, firmware customization, GPIO, and multimedia.

Hobby project developer

Board experiments

The Cubieboard work explored a small ARM development board through Linux firmware customization, USB-webcam face detection, general-purpose I/O, and the CedarX multimedia stack. The recordings document separate experiments rather than a single finished product.

Tools: Cubieboard 2, Linux, OpenCV, USB camera, GPIO, CedarX

Embedded vision on Cyclone V

Electronics & embedded systems · 2013-2014 research · 2023 publication

Linux, USB camera support, and an OpenCV face-detection application on the Altera SoCKit ARM/FPGA board.

Undergraduate researcher and first author of the subsequent publication

Objective

The project implemented a face-detection application on the Altera SoCKit development board. The board combines an ARM processor subsystem with FPGA fabric. The work covered the hardware configuration and software needed to capture a USB camera image and process it with OpenCV.

Implementation

QSys and Quartus were used for board configuration. A Linux build prepared with the Linaro toolchain included USB Video Class support for the webcam. OpenCV and the face-detection application completed the processing path. The repository contains thesis documents, development material, and demonstrations of board startup and camera operation.

Results

The integrated application was compared with an Intel Core i7-2670QM system using a standard Lena image. The thesis reports the SoC implementation as approximately 43% slower for that setup and workload. The implementation established a software baseline; FPGA acceleration was proposed as subsequent work.

Publication

The research was carried out in 2013-2014. The related paper, “Integration of OpenCV and Cyclone V Hybrid ARM and FPGA

SoC for Face Detection Application," was published in the ISCIT 2023 proceedings. I am its first author.

Tools: Cyclone V SoC, ARM, Linux, OpenCV, Quartus, QSys, Linaro, UVC

Smart energy monitoring and control

Electronics & embedded systems · 2014

A residential energy-metering prototype using an ADE7753, Arduino, local display, GSM reporting, and a web application.

Student project developer and presenter · team BANGON KALI

Hardware

The prototype combined an ADE7753-based energy meter, an Arduino, a custom base board, a 16×2 LCD, and GSM and GPS shields. The LCD displayed readings locally. The communications hardware supported reporting beyond the installation, while GPS supplied device-location information.

Reporting and application

The repository describes configurable reporting intervals and a web application for customer consumption history and utility billing. The student prototype integrated measurement, reporting, and control. Production metrology and utility deployment were outside the project scope.

Presentation

The project was presented as "Smart Energy Monitoring and Control System for Residential Application" at the first DOST-PCIEERD Electronics Design Competition. The council's newsletter names Gil Michael E. Regalado of team BANGON KALI as the Best Presenter recipient.

Tools: ADE7753, Arduino, PCB design, GSM, GPS, LCD, Web applications

Digital logic and EDA tutorials

Microelectronics & HDL · 2012–2014

Verilog models, testbenches, FPGA experiments, and tutorials covering circuit simulation and physical verification.

Example-code author and tutorial creator

Models and testbenches

The electronics repository contains adders, an adder/subtractor, counters, finite-state machines, and their testbenches. Several examples include simulation artifacts. The related jVerilog project provided a Windows interface around Icarus Verilog. Videos cover compilation, simulation, and FPGA board experiments.

Circuit design tool flow

The 2013 Synopsys tutorial series uses a NAND example to explain schematic capture, HSpice simulation, Hercules DRC/LVS checks, StarRC parasitic extraction, and post-layout simulation. The tutorial identifies limitations in the example NAND design. It was developed as educational material for the tool sequence.

Teaching reference

Washington University in St. Louis's ESE461 VCS tutorial links to the repository's adder directory on page 11. The linked material consists of the Verilog models and testbenches, which remain available with their source history.

Tools: Verilog, Icarus Verilog, VCS, HSpice, Hercules DRC/LVS, StarRC, Quartus, ModelSim

Arduino to the real-time web

Electronics & embedded systems · 2012

A 2012 experiment sending Arduino data through a serial connection and Node.js to a live browser interface.

Project and tutorial author · published as Bangon Kali

Data path

An Arduino sent data through a serial connection to a host computer. Node.js received the readings, and Socket.IO carried updates to a browser interface built with jQuery. The host computer handled the network-facing software. Demonstrations used Arduino and Arduino Mega boards.

Arduino feature

On 5 June 2012, Arduino's official blog published "Publishing data on the web with Node.JS." Alessandro Paganelli credited Bangon Kali and linked the detailed CodeProject tutorial.

Project material

The Arduino feature and video demonstrations document the project. The demonstrations show sensor data reaching the browser through the serial and host-software path. The source references retain the original tutorial citation and the dated Arduino article.

Tools: Arduino, Serial I/O, Node.js, Socket.IO, jQuery, Apache

Agus Maps: native maps in Flutter

Systems & platforms · 2026

An offline-map proof of concept integrating the CoMaps C++ engine with Flutter and platform graphics APIs.

Open-source project development · Agus Works

Purpose

Agus Maps is a Flutter plugin and reference implementation that embeds the CoMaps rendering engine. Regional map data can be bundled or downloaded for offline use. The work builds on CoMaps, its Organic Maps heritage, and OpenStreetMap data.

Graphics integration

The integration uses Dart FFI, native C++ code, and texture-based rendering across Android, iOS, macOS, Windows, and Linux. The Linux implementation includes EGL context management, render-thread coordination, deferred resizing, and map-asset path handling. Its texture transfer uses a CPU-mediated copy.

Project status

The repository describes working example applications on five platforms and classifies the project as a proof of concept. Its documentation distinguishes release v0.1.17 from later experimental development, including work on Dart-based build tooling. The linked videos demonstrate individual platform implementations.

Tools: Flutter, Dart FFI, C++, CoMaps, OpenStreetMap, Metal, EGL, OpenGL

Trapo: local document ingestion

Systems & platforms · 2026

A local document workbench for inspecting OCR text, page images, regions, and processing history.

Open-source project development · Agus Works and bangonkali

Document inspection

Trapo processes local PDFs and images and presents page previews alongside extracted text, bounding boxes, spans, and diagnostics. Local persistence retains document data and the history of ingestion runs.

Implementations

The Agus Works prototype used Python, FastAPI, DuckDB, and local document readers including Docling, MinerU, and Infinity Parser2. It stored file hashes, structured output, chunks, and page regions. The subsequent workbench uses a Rust server, a React interface, PDFium rendering, local persistence, and runtime and model loading. Its repository retains the name baidu-unlimited-ocr-portable.

Processing state

The workbench persists OCR stream events before broadcasting them. After a refresh, the interface reconstructs completed activity and continues receiving new events. Page-region anchors connect extracted spans to the document preview.

Development scope

The project uses existing OCR models and runtimes for ingestion and inspection. Graph extraction and graph-based retrieval remain planned extensions.

Tools: Rust, React, Python, DuckDB, OCR, PDFium, Native runtimes, OpenAPI

Generalist Skills with Hands-on Experience

Software, web and mobile development

- C#, C, C++ / MFC, Python, Java, Node.js, JavaScript / TypeScript, VB.NET, Swift, Kotlin, Borland Delphi, and Mono for Linux.

- ASP.NET Core; PHP with CodeIgniter, Symfony, and Laravel; HTML; React, React Native, Ionic, Angular, jQuery, and Meteor.
- Native Android and iOS development, plus Xamarin, React Native, Ionic, and Flutter.
- SQL Server, MySQL, PostgreSQL / TimescaleDB, IBM Db2, MongoDB, InfluxDB, Elasticsearch, RediSearch, and CouchDB with Hyperledger.

Distributed computing

- Distributed architecture with .NET Orleans and Dapr.
- Microservices and service buses for real-time industrial monitoring and messaging, using NServiceBus, RabbitMQ, AMQP, MQTT, and Amazon SQS.

Server management and cloud

- Linux and Windows server systems, MySQL, Apache, and NGINX for online clients and local government.
- VMware vSphere / NSX, Kubernetes / K3s, Proxmox, and bare-metal Hyper-V; a personal laboratory for continuing study.
- AWS, Google Cloud, Azure, OVH, Linode, and European colocation providers.

DevSecOps and delivery

- GitHub Actions, Bitbucket Pipelines, Azure Pipelines, Terraform, Ansible, Docker, and Kubernetes.
- Managed Kubernetes and self-hosted clusters on bare metal and private cloud.
- Deployment, evaluation, and integration of Git, GitHub, Bitbucket, GitLab, Jira, Jenkins, TeamCity, SonarQube, Snyk, Cloudflare, and third-party security products.

AI and machine learning

- Design, development, deployment, and validation of a TensorFlow-based clinical decision-support system for ICU facilities.
- Hands-on experiments with NVIDIA Jetson Nano and Xavier NX.
- Basic AI/ML classes for colleagues and friends, plus an invited online conference talk.
- AI application integration with Semantic Kernel, LangChain, Promptflow, AutoGen / AG2, Model Context Protocol, and Agent-to-Agent Protocol.
- Services from Amazon Bedrock, Azure AI Foundry, Google Gemini / Vertex AI, AssemblyAI, Groq, xAI, DeepSeek, OpenAI, and ElevenLabs.

Industrial control

- Hands-on Siemens S7-200 PLC programming.
- DeltaV distributed control systems and Rosemount sensor testing during the Emerson internship.

FPGA and digital design

- Altera Cyclone II Starter Development Kit and Arrow SoCKit hybrid ARM / FPGA development board.
- Synopsys Verilog synthesis, Altera Quartus, QSys, and ARM SoC EDS.

Microelectronics, analog and embedded systems

- Design and product-development participation in a BLE 5.0 Mesh IoT device and application suite.
- Application-layer development and embedded interfacing for a home battery appliance supporting solar input and electric-car charging.
- Synopsys analog tools, Verilog digital design, Proteus VSM, and Eagle PCB design.
- PlatformIO, Arduino, HI-TECH C, Atmel Studio, and Microchip MPLAB X.

Certifications and Qualifications

ISTQB-BCS Certified Tester Foundation Level

BCS, The Chartered Institute for IT / UK Testing Board

Awarded May 12, 2015

Foundation-level software-testing qualification awarded on 12 May 2015. Redacted public copy.

Credential record

CMAP Mobile App Testing - Foundation Level

iSQI GmbH

Awarded 2014

Passed the CMAP Mobile App Testing - Foundation Level examination in 2014.

Credential record

Vibration Analyst: Category II

Emerson Process Management Educational Services

Awarded February 13, 2015 · Valid through February 13, 2020

Completed the Category II requirements for vibration condition monitoring and diagnostics under ISO 18436-2.

Credential record

Bachelor of Science in Electronics & Communications Engineering

Mindanao State University - Iligan Institute of Technology

Awarded April 10, 2014

Degree conferred in Iligan City on 10 April 2014.

Credential record

Publications

Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application

Gil Michael E. Regalado, Jefferson A. Hora, Gene Fe P. Palencia, Harreez V. Quimque, Nieva M. Mapula

22nd International Symposium on Communications and Information Technologies (ISCIT), Sydney · pp. 1-5. 2023.

DOI: 10.1109/ISCIT57293.2023.10376045

Conference: October 16, 2023; indexed by IEEE: January 3, 2024. These dates are distinct from the publication year.

Education

BS Electronics & Communications Engineering

Mindanao State University - Iligan Institute of Technology · 2009-2014

Graduated April 10, 2014

Completed the engineering degree alongside college research, the Emerson internship, and freelance work for the Sendong response.

- Integration of OpenCV and Cyclone V FPGA and ARM SoC for face detection, presented to the BS ECE program and awarded College Best Thesis.
- Smart online and real-time energy monitoring and control for residential electricity providers, presented in the BS EE program and recognized in the DOST-PCIEERD competition.

First and second semesters, AY 2009-2010; First and second semesters, AY 2010-2011; First and second semesters and summer, AY 2011-2012; First and second semesters, AY 2012-2013; First and second semesters, AY 2013-2014

Secondary education

Philippine Science High School - Central Mindanao Campus · 2005-2009

Secondary education at the Central Mindanao Campus in Nangka, Balo-i, Lanao del Norte.

- Student Information Management System for Philippine Science High School - Central Mindanao Campus.

Awards / Honors

Finalist, First Electronics Design Competition

DOST-PCIEERD · March 27, 2014

The residential energy-monitoring and control project was a finalist in the first PCIEERD Electronics Design Competition.

Best Presenter, First Electronics Design Competition

DOST-PCIEERD · April 7, 2014

Best Presenter recognition for the energy-monitoring project presented at Crowne Plaza Manila Galleria on 27 March 2014. The college issued the special award on 7 April 2014.

College Best Thesis, ECE program

MSU-IIT College of Engineering · April 7, 2014

College Best Thesis recognition for the OpenCV and Cyclone V ARM/FPGA SoC face-detection research.

DOST-SEI Merit-A College of Engineering Scholar

Department of Science and Technology · School years 2009-2010, 2010-2011, and 2011-2012

Merit-A scholarship during the listed engineering academic years.

Presentations

AI and machine-learning online talk

Invited online conference broadcast

Date not recorded

An invited talk accompanying basic AI/ML teaching for friends and colleagues. The recording is preserved separately from the technical project videos.

OpenCV and Cyclone V face-detection research

7th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management · Hotel Centro, Puerto Princesa, Palawan

November 12, 2014 to November 16, 2014

Conference presentation of the undergraduate computer-vision research.

Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application

22nd International Symposium on Communications and Information Technologies (ISCIT) · Sydney, Australia

October 16, 2023 to October 18, 2023

Presentation at ISCIT 2023, separate from the proceedings year and the later IEEE indexing date.

Writing

Integrating Linux and OpenCV on SoCKit

My 2013-2014 undergraduate project ran an OpenCV face-detection application on the Altera SoCKit development board. The board combines an ARM processor subsystem with FPGA fabric. The work covered board configuration, Linux, USB camera support, and the application software.

Board and software integration

QSys and Quartus were used for the board configuration. The Linux build used the Linaro toolchain, with USB Video Class support enabled for the webcam. OpenCV provided the image-processing library used by the application.

The camera, kernel, libraries, and application formed one processing path. A usable camera image depended on the device being recognized by Linux and the application receiving it in the expected format. The project archive contains the thesis, development files, and demonstrations of board startup and camera operation.

Performance comparison

The thesis compared the SoCKit application with an Intel Core i7-2670QM system using a standard Lena image. It reported the SoC implementation as approximately 43% slower for that setup and workload.

The measured implementation established a software baseline. The conclusions proposed FPGA acceleration as subsequent work. Evaluating that extension would require selecting an operation to move into programmable logic and measuring its processing, data-transfer, and synchronization costs.

Publication

The research was carried out in 2013-2014. The related paper, "Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application," was published in the ISCIT 2023 proceedings. I am its first author, with Jefferson A. Hora, Gene Fe P. Palencia, Harreez V. Quimque, and Nieva M. Mapula.

Sensor data from device to browser

Two projects from 2012 and 2014 connected measurements from electronic hardware to a web application. The first displayed Arduino data in a live browser interface. The second combined residential energy metering with local display and remote reporting.

Arduino to the web

The 2012 experiment connected an Arduino to a host computer through a serial interface. Node.js received the device data, and Socket.IO delivered updates to a browser interface built with jQuery. This arrangement kept the network-facing software on the host computer.

Arduino's 5 June 2012 article, written by Alessandro Paganelli, credited my tutorial under the name Bangon Kali. Demonstrations showed the arrangement with Arduino and Arduino Mega boards.

Residential energy monitoring

The 2014 prototype used an ADE7753 metering circuit, an Arduino, a custom base board, and a 16×2 LCD. GSM supported periodic reporting, while GPS supplied device-location information. The application context included customer consumption history and utility billing.

The local display and remote application served different purposes. The LCD exposed readings at the device; the communications path carried readings beyond the installation. The repository describes configurable reporting intervals and retains the source and hardware documentation.

System structure

Both projects used a sequence of measurement, transport, and presentation. The Arduino experiment used a serial connection and a host computer. The energy-monitoring prototype added a local display, mobile communications, and location data.

These were demonstrations built with the components and software of their respective periods. The energy-monitoring work remained a student prototype, with measurement, reporting, and control integrated into one system.

Personal and Contextual Chronology

2005-2009 · education · Started secondary education

2009-2014 · education · Started engineering study

2011 demonstration · project · jVerilog: a small Windows Verilog IDE

2011 demonstrations · project · Early Node.js packaging for Windows

November 4, 2011 · technology · Node.js 0.6.0 and native Windows support

December 16, 2011 to December 17, 2011 · local-history · Tropical Storm Sendong crosses Mindanao

18 December 2011-March 2012 · career · Freelance IT Personnel

2012 · project · Arduino to the real-time web

2012-2014 · project · Digital logic and EDA tutorials

February 29, 2012 · technology · Raspberry Pi goes on sale

2013 demonstrations · project · Cubieboard: Linux, vision and GPIO

2013-2014 research · 2023 publication · project · Embedded vision on Cyclone V

April-June 2013 · career · Intern Test Engineer

May 29, 2013 · technology · React is open sourced

2014 · project · Smart energy monitoring and control

March 27, 2014 · award · Finalist, First Electronics Design Competition

April 7, 2014 · award · College Best Thesis, ECE program

April 7, 2014 · award · Best Presenter, First Electronics Design Competition

April 10, 2014 · graduation · Graduated

28 May 2014-8 August 2016 · career · Test Automation Engineer

November 12, 2014 to November 16, 2014 · presentation · OpenCV and Cyclone V face-detection research

July 21, 2015 · technology · Kubernetes 1.0 released

November 9, 2015 · technology · TensorFlow is open sourced

2016 demonstration · project · Espressif wireless-controller integration

8 August 2016–30 March 2017 · career · Software Developer

15 April 2017–31 January 2018 · career · Software Engineer

February 2018–April 2026 · career · Technical Manager / Head of Development

2020 demonstrations · project · Waning: React and browser graphics

June 21, 2022 · technology · GitHub Copilot available

November 30, 2022 · technology · ChatGPT public launch

2023 · publication · Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application

March 14, 2023 · technology · GPT-4 released

October 16, 2023 to October 18, 2023 · presentation · Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application

2026 · project · Agus Maps: native maps in Flutter

2026 · project · Trapo: local document ingestion

April 2026–present · career · Chief Technology Officer

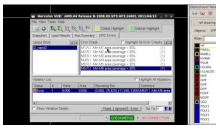
Date not recorded · presentation · AI and machine-learning online talk

School years 2009–2010, 2010–2011, and 2011–2012 · award · DOST-SEI Merit-A College of Engineering Scholar

Project date not recorded · project · Dash: a project-management workspace

Emerson test-automation work · project · Overwatch: distributed image verification

Complete Library Catalogue



Digital logic and EDA tutorials

Microelectronics & HDL · projects, videos, references

Related media

Digital logic and EDA tutorials · projects · Project period 2012–2014

Archive · Verilog, Icarus Verilog, VCS, HSpice, Hercules DRC/LVS, StarRC, Quartus, ModelSim

Example-code author and tutorial creator

Synopsys: an introduction to the design flow · videos · Published August 7, 2013

An introduction to HSpice, physical verification, parasitic extraction, and schematic-to-layout comparison through a NAND example.

Synopsys tool flow · Microelectronics, HDL & EDA · 20:48

Schematic capture and HSpice simulation · videos · Published August 9, 2013

A practical continuation of the Synopsys tool flow, focused on entering and simulating a circuit.

Synopsys tool flow · Microelectronics, HDL & EDA

Synopsys VCS on CentOS · videos · Published January 28, 2013

A recorded walkthrough of the Verilog simulation environment using VCS on Linux.

Microelectronics, HDL & EDA

CMOS JK flip-flop · videos · Published March 30, 2013

A circuit-level study of a JK flip-flop, part of the digital-design teaching archive.

CMOS D-latch · videos · Published March 30, 2013

A CMOS latch example connecting transistor-level implementation with digital behavior.

Testing a Cyclone II FPGA board · videos · Published March 8, 2013

A board-based FPGA experiment from the hardware and digital-logic archive.

A VGA synchronization timer · videos · Published January 22, 2013

An experiment in the timing logic needed to generate a VGA display signal.

Up/down counter with Xilinx tools · videos · Published December 30, 2012

A small counter design used to explore the Xilinx development workflow.

Up/down counter with Quartus and ModelSim · videos · Published December 30, 2012

A counter example connecting HDL development with simulation in the Altera toolchain.

Counter demonstration without narration · videos · Published December 30, 2012

A short visual record of counter behavior; useful alongside the narrated HDL examples.

Four-bit adder and subtractor · videos · Published September 20, 2011

A demonstration of arithmetic logic from the collection of small Verilog designs.

A Verilog workflow with Xilinx tools · videos · Published September 6, 2011

An introductory recording of the development workflow around a Verilog design.

An open-source Verilog workflow · videos · Published September 5, 2011

An introduction to working with Verilog using freely available simulation tooling.

Electronics projects and HDL examples · references · Date not recorded

Saved source

bangonkali · GitHub

Verilog adder models and testbenches · references · Date not recorded

Tutorial for VCS · ESE461 · references · Date not recorded

Washington University in St. Louis



jVerilog: a small Windows Verilog IDE

Microelectronics & HDL · projects, videos, references

Related media

jVerilog: a small Windows Verilog IDE · projects · Project period 2011 demonstration

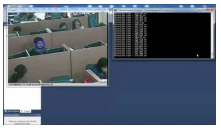
Archive · Icarus Verilog, Verilog, Windows

Tool author

jVerilog: a small Verilog IDE · videos · Published October 15, 2011

A demonstration of a Windows interface around Icarus Verilog for a compact simulation workflow.

jVerilog · Icarus Verilog interface · references · Date not recorded



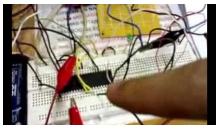
An OpenCV experiment

Electronics & embedded systems · videos

An OpenCV experiment · videos · Published March 28, 2013

A short record from the computer-vision development archive.

Embedded Linux & computer vision



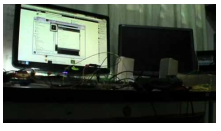
An ultrasonic sensor with a PIC microcontroller

Electronics & embedded systems · videos

An ultrasonic sensor with a PIC microcontroller · videos · Published January 31, 2013

A hardware experiment connecting distance sensing with a PIC-based controller.

MCU, electronics & instrumentation



Arduino relay experiments

Electronics & embedded systems · videos

Controlling a relay with Arduino · videos · Published April 18, 2012

A small hardware-control experiment using an Arduino and a relay.

Arduino relay: companion demonstration · videos · Published April 18, 2012

A second view of the relay-control experiment in the Arduino archive.



Arduino to the real-time web

Electronics & embedded systems · projects, articles, videos, references

Related media

Arduino to the real-time web · projects · Project period 2012

Archive · Arduino, Serial I/O, Node.js, Socket.IO, jQuery, Apache

Project and tutorial author · published as Bangon Kali

Sensor data from device to browser · articles · Date not recorded · Revised October 25, 2026

The hardware and software paths used in a 2012 Arduino web experiment and a 2014 residential energy-monitoring prototype.

Based on project material from 2012 and 2014.

Arduino and the web · videos · Published May 22, 2012

A demonstration of physical readings reaching a live web interface through the host computer.

Arduino Mega 2560 and the web · videos · Published May 20, 2012

A companion demonstration of the Arduino Mega and a browser-facing data path.

Publishing data on the web with Node.JS · references · Published June 5, 2012

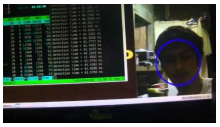
Arduino · Alessandro Paganelli

Arduino and the Web using NodeJS and SerialPort2 - original article · references · Date not recorded

CodeProject · Bangon Kali

Bangon Kali · public video archive · references · Date not recorded

Bangon Kali · YouTube



Cubieboard: Linux, vision and GPIO

Electronics & embedded systems · projects, videos, references

Related media

Cubieboard: Linux, vision and GPIO · projects · Project period 2013 demonstrations

Experiment · Cubieboard 2, Linux, OpenCV, USB camera, GPIO, CedarX

Hobby project developer

CedarX on Cubieboard · videos · Published October 14, 2013

An experiment with the Cubieboard multimedia stack and CedarX.

Cubieboard webcam face detection · videos · Published September 7, 2013

A demonstration connecting a USB webcam and computer vision on an embedded Linux board.

Cubieboard face-detection experiment · videos · Published August 28, 2013

A companion computer-vision demonstration from the Cubieboard series.

Cubieboard GPIO · videos · Published August 27, 2013

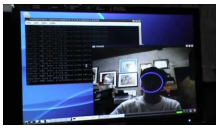
An exploration of general-purpose I/O from the embedded Linux environment.

First impressions of Cubieboard · videos · Published August 28, 2013

An introductory look at the board before the more focused Linux and vision experiments.

Cubieboard projects · references · Date not recorded

Bangonkali · YouTube



Embedded vision on Cyclone V

Electronics & embedded systems · projects, articles, videos, publications, awards, presentations, references

Related media

Embedded vision on Cyclone V · projects · Project period 2013-2014 research · 2023 publication

Research · Cyclone V SoC, ARM, Linux, OpenCV, Quartus, QSys, Linaro, UVC

Undergraduate researcher and first author of the subsequent publication

Integrating Linux and OpenCV on SoCKit · articles · Date not recorded · Revised October 25, 2026

Board configuration, USB camera support, and a face-detection baseline from the 2013-2014 SoCKit project.

Based on project material from 2013-2014; the related paper was published in 2023.

Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application · publications · Published 2023

22nd International Symposium on Communications and Information Technologies (ISCIT), Sydney · pp. 1-5

Gil Michael E. Regalado, Jefferson A. Hora, Gene Fe P. Palencia, Harreez V. Quimque, Nieva M. Mapula

College Best Thesis, ECE program · awards · Awarded April 7, 2014

MSU-IIT College of Engineering

OpenCV and Cyclone V face-detection research · presentations · Presented November 12, 2014

7th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment and Management · Hotel Centro, Puerto Princesa, Palawan

Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application · presentations · Presented October 16, 2023

22nd International Symposium on Communications and Information Technologies (ISCIT) · Sydney, Australia

OpenCV on the Cyclone V SoCKit · videos · Published February 13, 2014

A demonstration associated with the ARM/FPGA-board computer-vision research project.

SoCKit boot and USB camera support · videos · Published February 12, 2014

A record of Linux startup and UVC camera integration on the SoCKit platform.

SoCKit desktop integration with Synergy · videos · Published February 13, 2014

An experiment in interacting with the board's Linux environment from a shared desktop setup.

Preparing the SoCKit development board · videos · Published February 10, 2014

A physical-board preparation record from the SoCKit project archive.

Unboxing the SoCKit board · videos · Published November 16, 2013

An introduction to the hardware used in the embedded-vision research.

SoCKit computer-vision research archive · references · Date not recorded

SoCKit thesis · abstract · references · Date not recorded

Gil Michael Regalado

SoCKit thesis · conclusions and recommendations · references · Date not recorded

Microelectronics Laboratory · research publications · references · Date not recorded

MSU-IIT Microelectronics Laboratory



Espressif wireless-controller integration

Electronics & embedded systems · projects, videos, references

Related media

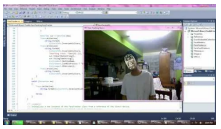
Espressif wireless-controller integration · projects · Project period 2016 demonstration

Prototype · ESP8266, Wi-Fi, Arduino, Digital design

ESP8266 wireless-controller experiment · videos · Published August 26, 2016

A practical review and demonstration around an Espressif-based wireless controller.

Espressif wireless controller demonstration · references · Date not recorded



Face detection with Kinect

Electronics & embedded systems · videos

Face detection with Kinect · videos · Published August 14, 2012

A computer-vision demonstration using input from a Kinect device.

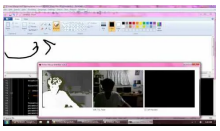


First impressions of a chipKIT board

Electronics & embedded systems · videos

First impressions of a chipKIT board · videos · Published December 20, 2016

An exploratory look at the development board and its place in an electronics workflow.



Kinect as a mouse input

Electronics & embedded systems · videos

Kinect as a mouse input · videos · Published August 14, 2012

An experiment connecting a depth-camera interaction to desktop cursor control.



PIC assembly tutorials

Electronics & embedded systems · videos, references

PIC assembly: episode 1 · videos · Published April 6, 2014

The opening installment of a practical series on programming PIC microcontrollers in assembly.

PIC assembly · MCU, electronics & instrumentation

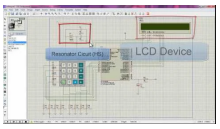
PIC assembly: episode 2 · videos · Published June 29, 2014

A continuation of the PIC assembly series, developing the microcontroller programming workflow.

PIC assembly: episode 2, part 2 · videos · Published June 30, 2014

A detailed PIC tutorial covering memory-bank switching, I/O, and the relationship between instructions and device behavior.

PIC assembly · MCU, electronics & instrumentation · 44:21

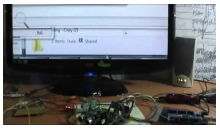


PIC interfaces: LCD and keypad

Electronics & embedded systems · videos

PIC interfaces: LCD and keypad · videos · Published August 20, 2012

A practical demonstration of a display and keypad connected to a microcontroller.



Project Blacky recordings

Electronics & embedded systems · videos

Project Blacky: hardware · videos · Published March 1, 2013

An overview of the hardware in the Project Blacky student-build series.

Project Blacky: PCB work, part 1 · videos · Published February 19, 2013

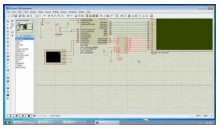
The first PCB-focused recording in the Project Blacky build archive.

Project Blacky: PCB work, part 2 · videos · Published February 19, 2013

A continuation of the PCB work documented for Project Blacky.

Project Blacky: breadboard prototype · videos · Published February 19, 2013

A bench-level demonstration from the project's breadboard development stage.



Setting up a Proteus development workflow

Electronics & embedded systems · videos

Setting up a Proteus development workflow · videos · Published July 12, 2012

An introductory recording of the simulation environment used for electronics exercises.



Smart energy monitoring and control

Electronics & embedded systems · projects, videos, awards, references

Related media

Smart energy monitoring and control · projects · Project period 2014

Prototype · ADE7753, Arduino, PCB design, GSM, GPS, LCD, Web applications

Student project developer and presenter · team BANGON KALI

Finalist, First Electronics Design Competition · awards · Awarded March 27, 2014

DOST-PCIEERD

Best Presenter, First Electronics Design Competition · awards · Awarded April 7, 2014

SEMACS: energy monitoring and control · videos · Published March 19, 2014

A demonstration of the residential energy-monitoring prototype, linking metering hardware with application information.

Gizduino custom base board · videos · Published January 26, 2014

A hardware-focused record of a custom base board for a microcontroller project.

Power-meter platform · references · Date not recorded

First Electronics Design Competition · Best Presenter · references Published 2014

Preview unavailable

DOST-PCIEERD · Pinoy Innovations, January–June 2014



Transformer winding

Electronics & embedded systems · videos

Transformer winding · videos · Published October 23, 2013

A hands-on look at winding a transformer as part of the electrical-hardware archive.

Unwinding a transformer · videos · Published October 5, 2013

A practical look inside a transformer and the construction of its windings.



Working with OpenWrt firmware

Electronics & embedded systems · videos

Working with OpenWrt firmware · videos · Published February 20, 2026

A firmware-focused experiment in the embedded Linux archive.



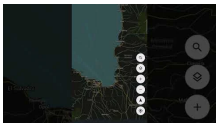
A currency application in VB.NET

Systems & platforms · videos

A currency application in VB.NET · videos · Published November 12, 2011

An early desktop-programming exercise built with Visual Basic .NET.

Software, observability & delivery



Agus Maps: native maps in Flutter

Systems & platforms · projects, videos, references

Related media

Agus Maps: native maps in Flutter · projects · Project period 2026

Prototype · Flutter, Dart FFI, C++, CoMaps, OpenStreetMap, Metal, EGL, OpenGL

Open-source project development · Agus Works

Agus Maps on Android · videos · Published May 5, 2026

A demonstration of the native map-rendering integration in a Flutter application on Android.

Native mobile & desktop systems

Agus Maps on iOS · videos · Published May 5, 2026

The offline-map integration shown in the iOS reference application.

Agus Maps on macOS · videos · Published May 5, 2026

A desktop demonstration of the map engine embedded in a Flutter window.

Agus Maps on Windows · videos · Published December 28, 2025

A Windows desktop demonstration of the Flutter and native map-engine integration.

Agus Maps on Linux · videos · Published January 7, 2026

A demonstration of the Linux integration and its native rendering path.

Agus Maps on Android: landscape · videos · Published May 5, 2026

The Flutter map plugin demonstrated in an Android landscape layout.

Agus Maps example application · videos · Published January 26, 2026

A walkthrough of the example application used to exercise the map plugin.

Agus Maps: project overview · videos · Published January 10, 2026

An overview of the offline-map plugin and its integration with Flutter.

Agus Maps: early macOS experiment · videos · Published December 28, 2025

An earlier desktop integration record, retained as part of the development sequence.

Agus Maps: early Android experiment · videos · Published December 19, 2025

An early Android recording from the map plugin's development history.

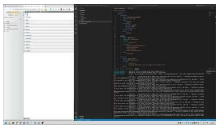
Agus Maps on iOS: short demonstration · videos · Published December 23, 2025

A compact look at the iOS map integration.

Agus Maps Flutter · references · Date not recorded

Agus Works · GitHub

Agus Maps · Linux integration notes · references · Date not recorded



Building a PHP API

Systems & platforms · videos

Building a PHP API · videos · Published May 25, 2022

A recorded application-development exercise focused on a PHP API.



C# continuous integration

Systems & platforms · videos

C# continuous integration: part 1 · videos · Published October 6, 2017

The first part of a walkthrough connecting C# development with automated delivery tooling.

C# continuous integration: part 2 · videos · Published October 6, 2017

A continuation of the C# continuous-integration workflow.



Dash: a project-management workspace

Systems & platforms · projects, references

Related media

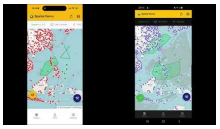
Dash: a project-management workspace · projects · Date not recorded

Practice · React, TypeScript, OneDrive, Office 365, Gantt charts

Project developer

Dash · project management tool · references · Date not recorded

Gil Michael Regalado · Netzon



DuckDB in mobile applications

Systems & platforms · videos

DuckDB in a Capacitor application · videos · Published December 10, 2025

An experiment bringing a local analytical database into a native application shell.

DuckDB on Android: short demonstration · videos · Published December 4, 2025

A brief record of the local database experiment on an Android device.



Early Node.js packaging for Windows

Systems & platforms · projects, videos, references

Related media

Early Node.js packaging for Windows · projects · Project period 2011 demonstrations

Archive · Node.js, Windows, Socket.IO, JavaScript

Independent developer

A Node.js chat application on Windows · videos · Published October 16 2011

A demonstration associated with the early Node.js Windows packaging and Socket.IO work.

Node.js and Socket.IO: an early chat demo · videos · Published September 4, 2011

An earlier recording of the real-time messaging example for Windows users.

Node JS for Windows · Google Code archive · references · Date not recorded

Bangon Kali · Google Code



Kokoro 82M: local speech synthesis

Systems & platforms · videos

Kokoro 82M: local speech synthesis · videos · Published January 10, 2025

A short experiment with an existing speech-synthesis model running in a local workflow.

Local AI, speech & OCR



Magtxt demonstrations

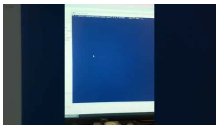
Systems & platforms · videos

Magtxt: application demonstration · videos · Published December 5, 2011

A demonstration from the messaging-application archive.

Magtxt: companion demonstration · videos · Published November 12, 2011

An additional record of the messaging-application experiment.



Network measurements with iPerf3

Systems & platforms · videos

Network measurements with iPerf3 · videos · Published March 4, 2024

A practical recording of network-performance measurement with iPerf3.



Overwatch: distributed image verification

Systems & platforms · projects

Illustration

Overwatch: distributed image verification · projects · Date not recorded

Practice · OpenCV, Python, C#, NuGet, RabbitMQ, CodedUI, UI Automation, MSAA

Framework developer



Sherpa speech on Android

Systems & platforms · videos

Sherpa speech on Android · videos · Published January 9, 2025

A short demonstration of speech tooling integrated on an Android device.



Sparklines in an application interface

Systems & platforms · videos

Sparklines in an application interface · videos · Published March 13, 2016

A small visualization experiment using compact charts to communicate data.



TP-Link TL-SX1008: short hardware look

Systems & platforms · videos

TP-Link TL-SX1008: short hardware look · videos · Published February 6, 2026

A brief hardware-oriented record from the networking and homelab archive.



Tracing with Grafana Tempo and OpenTelemetry

Systems & platforms · videos

Tracing with Grafana Tempo and OpenTelemetry · videos · Published July 19, 2023

An observability-focused recording about following application activity through distributed traces.



Trapo: local document ingestion

Systems & platforms · projects, videos, references

Related media

Trapo: local document ingestion · projects · Project period 2026

Experiment · Rust, React, Python, DuckDB, OCR, PDFium, Native runtimes, OpenAPI

Open-source project development · Agus Works and bangonkali

Local OCR with the Baidu model ecosystem · videos · Published June 24, 2026

An OCR application demonstration related to the local document-processing work that developed into Trapo.

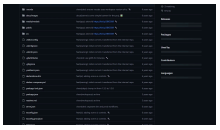
Trapo · Python ingestion and inspection prototype · references · Date not recorded

Trapo · portable Rust and React workbench · references · Date not recorded

Unlimited OCR · demonstration repository · references · Date not recorded

Hugging Face · learning activity · references · Date not recorded

Hugging Face · bangonkali



Waning: React and browser graphics

Systems & platforms · projects, videos, references

Related media

Waning: React and browser graphics · projects · Project period 2020 demonstrations

Experiment · React, TypeScript, 3D graphics, Web Workers, Canvas

Prototype developer

Waning: a web-based 3D experiment · videos · Published October 9, 2020

An experiment combining a React interface with a browser-based 3D scene.

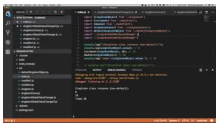
Waning: rendering on the main thread · videos · Published June 12, 2020

One side of the browser-rendering experiment, using the main thread.

Waning: rendering in a worker · videos · Published June 12, 2020

The companion experiment moving rendering work away from the main browser thread.

Waning · 3D web development demonstrator · references · Date not recorded



Working with ES6 imports

Systems & platforms · videos

Working with ES6 imports · videos · Published June 20, 2017

A focused explanation of JavaScript module imports in an application workflow.



Xamarin application development

Systems & platforms · videos

Xamarin development: part 1 · videos · Published December 23, 2016

The opening installment of a mobile-application development walkthrough with Xamarin.

Xamarin development: part 2 · videos · Published December 26, 2016

A continuation of the Xamarin application-development series.

Xamarin application preview · videos · Published December 23, 2016

A preview accompanying the mobile-development walkthrough.



CMAP Mobile App Testing - Foundation Level

Software testing · credentials, references

CMAP Mobile App Testing - Foundation Level · credentials · Awarded 2014

Certification

iSQI GmbH



ISTQB-BCS Certified Tester Foundation Level

Software testing · credentials, references

ISTQB-BCS Certified Tester Foundation Level · credentials · Awarded May 12, 2015

BCS, The Chartered Institute for IT / UK Testing Board



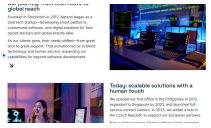
Vibration Analyst: Category II

Industrial systems · credentials, references

Vibration Analyst: Category II · credentials · Awarded February 13, 2015

Emerson Process Management Educational Services

Valid through February 13, 2020



Chief Technology Officer

Career · career, references

Related media

Chief Technology Officer · career · Career period April 2026-present

System architecture, FinOps, DevSecOps, AI/ML, Data engineering, Cloud infrastructure

Netzon Group

Netzon Group · engineering leadership · references · Date not recorded

Netzon Group · selected client projects · references · Date not recorded



Freelance IT Personnel

Career · career, references

Related media

Freelance IT Personnel · career · Career period 18 December 2011-March 2012

AWS EC2, MySQL, CodeIgniter, Yii, PHP, JavaScript, HTML, Google Maps

City Social Welfare and Development Office · Iligan City

Sendong calamity dashboard · references · Date not recorded

Gil Michael Regalado · project archive



Intern Test Engineer

Career · career

Illustration

Intern Test Engineer · career · Career period April-June 2013

C# WinForms, PLC programming, DCS programming, MATLAB

Emerson Process Management · PlantWeb



Software Developer

Career · career

Illustration

Software Developer · career · Career period 8 August 2016–30 March 2017

MFC C++, C#, WinForms, Angular 1, MS SQL, ASP.NET

Emerson Process Management · PlantWeb Solutions Group



Software Engineer

Career · career

Illustration

Software Engineer · career · Career period 15 April 2017–31 January 2018

MongoDB, React, FlowJS, Nodejs, Socket.IO, RabbitMQ, Amazon SQS, Docker, Portainer, AWS, DigitalOcean

High Output Ventures



Technical Manager / Head of Development

Career · career

Related media

Technical Manager / Head of Development · career · Career period February 2018–April 2026

MongoDB, PostgreSQL, MySQL, Cloudflare, Angular, Flutter / Dart, React Native / TypeScript, FastAPI / Python, ASP.NET Core / C#, TensorFlow, Langflow, Semantic Kernel, Promptflow, Ragflow, Amazon Bedrock, Azure AI Foundry, Google Gemini / Vertex AI, AssemblyAI, ElevenLabs, AWS, Google Cloud, Azure, Linode, OVH, VMware private cloud, Kubernetes, K3s, GitLab, Protocol Buffers, Kotlin, Swift

Netzon Global Tech Inc. / Netzon Group



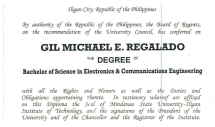
Test Automation Engineer

Career · career

Illustration

Test Automation Engineer · career · Career period 28 May 2014–8 August 2016

Python, Sikuli, OpenCV, C#, MSTest, C++ UI Automation, Selenium, MS SQL, TFS, RabbitMQ



BS Electronics & Communications Engineering

Education · credentials, education, awards, references

Related media

Started engineering study · BS Electronics & Communications Engineering · education · Studied 2009–2014

Started engineering study on 3 June 2009, beginning the BS Electronics & Communications Engineering program.

First and second semesters, AY 2009-2010 · First and second semesters, AY 2010-2011 · First and second semesters and summer, AY 2011-2012 · First and second semesters, AY 2012-2013 · First and second semesters, AY 2013-2014

Mindanao State University - Iligan Institute of Technology

Graduated · BS Electronics & Communications Engineering · education · Graduated April 10, 2014

Integration of OpenCV and Cyclone V FPGA and ARM SoC for face detection, presented to the BS ECE program and awarded College Best Thesis. Smart online and real-time energy monitoring and control for residential electricity providers, presented in the BS EE program and recognized in the DOST-PCIEERD competition.

Bachelor of Science in Electronics & Communications Engineering · credentials · Awarded April 10, 2014

Diploma

DOST-SEI Merit-A College of Engineering Scholar · awards · Date not recorded

School years 2009-2010, 2010-2011, and 2011-2012

Department of Science and Technology



Secondary education

Education · education

Illustration

Started secondary education · Secondary education · education · Studied 2005–2009

Philippine Science High School - Central Mindanao Campus



AI and machine-learning online talk

Presentations · presentations, references

Related media

AI and machine-learning online talk · presentations · Date not recorded

Invited online conference broadcast

Online AI discussion · references · Date not recorded

YouTube



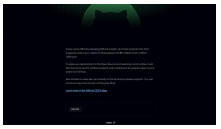
ChatGPT public launch

Technology history · context

ChatGPT public launch · context · Context November 30, 2022

The public research preview marks the editorial boundary used here for the mainstream generative-AI era.

Historical context · not a personal adoption date



GitHub Copilot available

Technology history · context

GitHub Copilot available · context · Context June 21, 2022

AI coding assistance becomes generally available to individual developers.



GPT-4 released

Technology history · context

GPT-4 released · context · Context March 14, 2023

A frontier-model milestone, with access through ChatGPT and an API waitlist.



Kubernetes 1.0 released

Technology history · context

Kubernetes 1.0 released · context · Context July 21, 2015

The first production release provided an open platform for container orchestration.



Node.js 0.6.0 and native Windows support

Technology history · context

Node.js 0.6.0 and native Windows support · context · Context November 4, 2011

The stable 0.6 release included a Windows executable and native-addon support, alongside the earlier independent Windows packaging work.



Raspberry Pi goes on sale

Technology history · context

Raspberry Pi goes on sale · context · Context February 29, 2012

An inexpensive ARM computer broadened access to embedded Linux and physical-computing experiments.

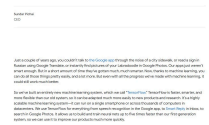


React is open sourced

Technology history · context

React is open sourced · context · Context May 29, 2013

The public React release marked a milestone in component-based web interfaces.



TensorFlow is open sourced

Technology history · context

TensorFlow is open sourced · context · Context November 9, 2015

Google released TensorFlow for machine-learning research and application development.

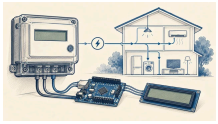


Tropical Storm Sendong crosses Mindanao

Local history · context

Tropical Storm Sendong crosses Mindanao · context · Context December 16, 2011

Sendong brought catastrophic flooding to northern Mindanao, including Iligan and Cagayan de Oro. The evacuation-center monitoring work followed this event.



Advancing Innovation and Technopreneurship in Mindanao

Professional references · references

Illustration

Advancing Innovation and Technopreneurship in Mindanao · references · Published October 8, 2014

MSU-IIT

Reviewed Public Activity

Specify the UDP port range used by Netbird clients

netbirdio/netbird · issue · involved · closed

Created December 12, 2023; updated October 6, 2026

Add the possibility to exclude certain domains from exit nodes all internet traffic routing

netbirdio/netbird · issue · involved · closed

Created August 28, 2024; updated October 5, 2026

[bug]: Build Error With Tailwind CSS Prefix `The 'border-border' class does not exist.`

shadcn-ui/ui · issue · involved · open

Created December 14, 2024; updated September 29, 2026

How to build on Windows with Visual Studio 2012 Premium?

shimat/opencvsharp · issue · authored · closed

Created March 20, 2015; updated July 25, 2026

Add troubleshooting steps for ZLIB and MSB3073 `native_assets` folder error during windows setup

agus-works/agus-maps-flutter · pull-request · involved · merged

Created June 3, 2026; updated June 3, 2026

Add Windows/Linux Widgetbook target

agus-works/agus-maps-flutter · pull-request · involved · merged

Created May 31, 2026; updated June 3, 2026

feat(agus): bump comaps to v2026.04.23-19 and improved layouts

agus-works/agus-maps-flutter · pull-request · authored · merged

Created May 5, 2026; updated May 24, 2026

feat(android): make compatible with Android Gradle plugin 9.1.0

agus-works/agus-maps-flutter · pull-request · authored · merged

Created January 26, 2026; updated April 30, 2026

Source References

Sendong calamity dashboard · Gil Michael Regalado · project archive

A historical dashboard screenshot recovered from the project archive. The date below records recovery of this project image.

archive: October 25, 2026

ISTQB®-BCS Certified Tester Foundation Level · BCS · ISTQB · UK Testing Board

document: October 25, 2026

Publishing data on the web with Node.JS · Arduino · Alessandro Paganelli · Published June 5, 2012

An excerpt from Arduino's June 5, 2012 article, including its attribution to Bangon Kali.

webpage: October 25, 2026

Arduino and the Web using NodeJS and SerialPort2 - original article · CodeProject · Bangon Kali

archive: October 25, 2026

Tutorial for VCS · ESE461 · Washington University in St. Louis

Page 11 lists the Verilog adder models and testbenches as an example resource. Images are rendered from the saved PDF.

document: October 25, 2026

Electronics projects and HDL examples · bangonkali · GitHub

webpage: October 25, 2026

Verilog adder models and testbenches · bangonkali · GitHub

webpage: October 25, 2026

Synopsys tutorial · introduction and tool flow · Bangon Kali · YouTube · Published August 7, 2013

video-poster: October 25, 2026

PIC assembly tutorial · episode 2, part 2 · Bangon Kali · YouTube · Published June 30, 2014

video-poster: October 25, 2026

SoCKit computer-vision research archive · bangonkali · GitHub

webpage: October 25, 2026

SoCKit thesis · abstract · Gil Michael Regalado

webpage: October 25, 2026; document: October 25, 2026

SoCKit thesis · conclusions and recommendations · Gil Michael Regalado

webpage: October 25, 2026; document: October 25, 2026

Integration of OpenCV and Cyclone V Hybrid ARM and FPGA SoC for Face Detection Application · IEEE · ISCIT 2023 · Published 2023

webpage: October 25, 2026

Microelectronics Laboratory · research publications · MSU-IIT Microelectronics Laboratory

The 2023 publication entry for the OpenCV and Cyclone V paper, with its five authors.

webpage: October 25, 2026

Power-meter platform · bangonkali · GitHub

webpage: October 25, 2026

First Electronics Design Competition · Best Presenter · DOST-PCIEERD · Pinoy Innovations, January–June 2014 · Published 2014

Preview unavailable.

Smart Energy Monitoring and Control System demonstration · Bangon Kali · YouTube · Published March 19, 2014

video-poster: October 25, 2026

Netzon Group · selected client projects · Netzon Group

webpage: October 25, 2026

Netzon Group · engineering leadership · Netzon Group

webpage: October 25, 2026

Agus Maps Flutter · Agus Works · GitHub

webpage: October 25, 2026

Agus Maps · Linux integration notes · Agus Works · GitHub

webpage: October 25, 2026

Trapo · Python ingestion and inspection prototype · Agus Works · GitHub

webpage: October 25, 2026

Trapo · portable Rust and React workbench · bangonkali · GitHub

webpage: October 25, 2026

Unlimited OCR · demonstration repository · bangonkali · GitHub

webpage: October 25, 2026

Bangon Kali · public video archive · Bangon Kali · YouTube

webpage: October 25, 2026

Hugging Face · learning activity · Hugging Face · bangonkali

webpage: October 25, 2026

NodeJS for Windows · Google Code archive · Bangon Kali · Google Code

webpage: October 25, 2026

Advancing Innovation and Technopreneurship in Mindanao · MSU-IIT · Published October 8, 2014

Preview unavailable.

CMAP Mobile App Testing - Foundation Level certificate · iSQI GmbH

The certificate records the CMAP Foundation Level examination. This public copy removes the certificate identifier and signature.

document: October 25, 2026

Vibration Analyst: Category II certificate · Emerson Process Management Educational Services

A historical Category II certificate issued on 13 February 2015 and valid through 13 February 2020. This public copy removes the certificate identifier and signatures.

document: October 25, 2026

Bachelor of Science in Electronics & Communications Engineering diploma · Mindanao State University - Iligan Institute of Technology

The diploma records the degree conferred on 10 April 2014. This public copy removes the signature region and rotates the scan for reading.

document: October 25, 2026

Dash · project management tool · Gil Michael Regalado · Netzon

webpage: October 25, 2026

Waning · 3D web development demonstrator · bangonkali · GitHub

webpage: October 25, 2026

Espressif wireless controller demonstration · Bangonkali · YouTube

video-poster: October 25, 2026

jVerilog · Icarus Verilog interface · bangonkali · GitHub

webpage: October 25, 2026

Cubieboard projects · Bangonkali · YouTube

video-poster: October 25, 2026

Online AI discussion · YouTube

supporting-evidence: October 25, 2026

Schematic capture and HSpice simulation · Bangonkali · YouTube · Published August 9, 2013

video-poster: October 25, 2026

CMOS JK flip-flop · Bangonkali · YouTube · Published March 30, 2013

video-poster: October 25, 2026

CMOS D-latch · Bangonkali · YouTube · Published March 30, 2013

video-poster: October 25, 2026

Testing a Cyclone II FPGA board · Bangonkali · YouTube · Published March 8, 2013

video-poster: October 25, 2026

Synopsys VCS on CentOS · Bangonkali · YouTube · Published January 28, 2013

video-poster: October 25, 2026

A VGA synchronization timer · Bangonkali · YouTube · Published January 22, 2013

video-poster: October 25, 2026

Up/down counter with Xilinx tools · Bangonkali · YouTube · Published December 30, 2012

video-poster: October 25, 2026

Up/down counter with Quartus and ModelSim · Bangonkali · YouTube · Published December 30, 2012

video-poster: October 25, 2026

Counter demonstration without narration · Bangonkali · YouTube · Published December 30, 2012

video-poster: October 25, 2026

jVerilog: a small Verilog IDE · Bangonkali · YouTube · Published October 15, 2011

video-poster: October 25, 2026

Four-bit adder and subtractor · Bangonkali · YouTube · Published September 20, 2011

video-poster: October 25, 2026

A Verilog workflow with Xilinx tools · Bangonkali · YouTube · Published September 6, 2011

video-poster: October 25, 2026

An open-source Verilog workflow · Bangonkali · YouTube · Published September 5, 2011

video-poster: October 25, 2026

PIC assembly: episode 1 · Bangonkali · YouTube · Published April 6, 2014

video-poster: October 25, 2026

PIC assembly: episode 2 · Bangonkali · YouTube · Published June 29, 2014

video-poster: October 25, 2026

An ultrasonic sensor with a PIC microcontroller · Bangonkali · YouTube · Published January 31, 2013

video-poster: October 25, 2026

PIC interfaces: LCD and keypad · Bangonkali · YouTube · Published August 20, 2012

video-poster: October 25, 2026

Setting up a Proteus development workflow · Bangonkali · YouTube · Published July 12, 2012

video-poster: October 25, 2026

Gizduino custom base board · Bangonkali · YouTube · Published January 26, 2014

video-poster: October 25, 2026

Transformer winding · Bangonkali · YouTube · Published October 23, 2013

video-poster: October 25, 2026

Unwinding a transformer · Bangonkali · YouTube · Published October 5, 2013

video-poster: October 25, 2026

Project Blacky: hardware · Bangonkali · YouTube · Published March 1, 2013

video-poster: October 25, 2026

Project Blacky: PCB work, part 1 · Bangonkali · YouTube · Published February 19, 2013

video-poster: October 25, 2026

Project Blacky: PCB work, part 2 · Bangonkali · YouTube · Published February 19, 2013

video-poster: October 25, 2026

Project Blacky: breadboard prototype · Bangonkali · YouTube · Published February 19, 2013

video-poster: October 25, 2026

Arduino and the web · Bangonkali · YouTube · Published May 22, 2012

video-poster: October 25, 2026

Arduino Mega 2560 and the web · Bangonkali · YouTube · Published May 20, 2012

video-poster: October 25, 2026

Controlling a relay with Arduino · Bangonkali · YouTube · Published April 18, 2012

video-poster: October 25, 2026

Arduino relay: companion demonstration · Bangonkali · YouTube · Published April 18, 2012

video-poster: October 25, 2026

First impressions of a chipKIT board · Bangonkali · YouTube · Published December 20, 2016

video-poster: October 25, 2026

ESP8266 wireless-controller experiment · Bangonkali · YouTube · Published August 26, 2016

video-poster: October 25, 2026

Working with OpenWrt firmware · Bangonkali · YouTube · Published February 20, 2026

video-poster: October 25, 2026

OpenCV on the Cyclone V SoCKit · Bangonkali · YouTube · Published February 13, 2014

video-poster: October 25, 2026

SoCKit desktop integration with Synergy · Bangonkali · YouTube · Published February 13, 2014

video-poster: October 25, 2026

SoCKit boot and USB camera support · Bangonkali · YouTube · Published February 12, 2014

video-poster: October 25, 2026

Preparing the SoCKit development board · Bangonkali · YouTube · Published February 10, 2014

video-poster: October 25, 2026

Unboxing the SoCKit board · Bangonkali · YouTube · Published November 16, 2013

video-poster: October 25, 2026

CedarX on Cubieboard · Bangonkali · YouTube · Published October 14, 2013
video-poster: October 25, 2026

Cubieboard webcam face detection · Bangonkali · YouTube · Published September 7, 2013
video-poster: October 25, 2026

Cubieboard face-detection experiment · Bangonkali · YouTube · Published August 28, 2013
video-poster: October 25, 2026

Cubieboard GPIO · Bangonkali · YouTube · Published August 27, 2013
video-poster: October 25, 2026

First impressions of Cubieboard · Bangonkali · YouTube · Published August 28, 2013
video-poster: October 25, 2026

An OpenCV experiment · Bangonkali · YouTube · Published March 28, 2013
video-poster: October 25, 2026

Kinect as a mouse input · Bangonkali · YouTube · Published August 14, 2012
video-poster: October 25, 2026

Face detection with Kinect · Bangonkali · YouTube · Published August 14, 2012
video-poster: October 25, 2026

Agus Maps on Android: landscape · Bangonkali · YouTube · Published May 5, 2026
video-poster: October 25, 2026

Agus Maps on Android · Bangonkali · YouTube · Published May 5, 2026
video-poster: October 25, 2026

Agus Maps on iOS · Bangonkali · YouTube · Published May 5, 2026
video-poster: October 25, 2026

Agus Maps on macOS · Bangonkali · YouTube · Published May 5, 2026
video-poster: October 25, 2026

Agus Maps example application · Bangonkali · YouTube · Published January 26, 2026
video-poster: October 25, 2026

Agus Maps: project overview · Bangonkali · YouTube · Published January 10, 2026
video-poster: October 25, 2026

Agus Maps on Linux · Bangonkali · YouTube · Published January 7, 2026
video-poster: October 25, 2026

Agus Maps: early macOS experiment · Bangonkali · YouTube · Published December 28, 2025
video-poster: October 25, 2026

Agus Maps on Windows · Bangonkali · YouTube · Published December 28, 2025
video-poster: October 25, 2026

Agus Maps: early Android experiment · Bangonkali · YouTube · Published December 19, 2025
video-poster: October 25, 2026

DuckDB in a Capacitor application · Bangonkali · YouTube · Published December 10, 2025
video-poster: October 25, 2026

Agus Maps on iOS: short demonstration · Bangonkali · YouTube · Published December 23, 2025
video-poster: October 25, 2026

DuckDB on Android: short demonstration · Bangonkali · YouTube · Published December 4, 2025
video-poster: October 25, 2026

Tracing with Grafana Tempo and OpenTelemetry · Bangonkali · YouTube · Published July 19, 2023
video-poster: October 25, 2026

Network measurements with iPerf3 · Bangonkali · YouTube · Published March 4, 2024
video-poster: October 25, 2026

C# continuous integration: part 1 · Bangonkali · YouTube · Published October 6, 2017
video-poster: October 25, 2026

C# continuous integration: part 2 · Bangonkali · YouTube · Published October 6, 2017
video-poster: October 25, 2026

Building a PHP API · Bangonkali · YouTube · Published May 25, 2022
video-poster: October 25, 2026

Working with ES6 imports · Bangonkali · YouTube · Published June 20, 2017
video-poster: October 25, 2026

Xamarin development: part 1 · Bangonkali · YouTube · Published December 23, 2016
video-poster: October 25, 2026

Xamarin development: part 2 · Bangonkali · YouTube · Published December 26, 2016
video-poster: October 25, 2026

Xamarin application preview · Bangonkali · YouTube · Published December 23, 2016
video-poster: October 25, 2026

Waning: a web-based 3D experiment · Bangonkali · YouTube · Published October 9, 2020
video-poster: October 25, 2026

Waning: rendering on the main thread · Bangonkali · YouTube · Published June 12, 2020
video-poster: October 25, 2026

Waning: rendering in a worker · Bangonkali · YouTube · Published June 12, 2020
video-poster: October 25, 2026

Sparklines in an application interface · Bangonkali · YouTube · Published March 13, 2016
video-poster: October 25, 2026

Magtxt: application demonstration · Bangonkali · YouTube · Published December 5, 2011
video-poster: October 25, 2026

Magtxt: companion demonstration · Bangonkali · YouTube · Published November 12, 2011
video-poster: October 25, 2026

A currency application in VB.NET · Bangonkali · YouTube · Published November 12, 2011
video-poster: October 25, 2026

A Node.js chat application on Windows · Bangonkali · YouTube · Published October 16, 2011
video-poster: October 25, 2026

Node.js and Socket.IO: an early chat demo · Bangonkali · YouTube · Published September 4, 2011
video-poster: October 25, 2026

TP-Link TL-SX1008: short hardware look · Bangonkali · YouTube · Published February 6, 2026
video-poster: October 25, 2026

Local OCR with the Baidu model ecosystem · Bangonkali · YouTube · Published June 24, 2026
video-poster: October 25, 2026

Kokoro 82M: local speech synthesis · Bangonkali · YouTube · Published January 10, 2025
video-poster: October 25, 2026

Sherpa speech on Android · Bangonkali · YouTube · Published January 9, 2025
video-poster: October 25, 2026

GitHub Copilot available · Published June 21, 2022
webpage: October 25, 2026

ChatGPT public launch · Published November 30, 2022
webpage: October 25, 2026

GPT-4 released · Published March 14, 2023
webpage: October 25, 2026

Node.js 0.6.0 and native Windows support
webpage: October 25, 2026

Tropical Storm Sendong crosses Mindanao
webpage: October 25, 2026

Raspberry Pi goes on sale
webpage: October 25, 2026

React is open sourced
webpage: October 25, 2026

Kubernetes 1.0 released
webpage: October 25, 2026

TensorFlow is open sourced
webpage: October 25, 2026

Specify the UDP port range used by Netbird clients · netbirdio/netbird · GitHub · Published December 12, 2023

Participated in an issue in netbirdio/netbird.

webpage: October 25, 2026

Add the possibility to exclude certain domains from exit nodes all internet traffic routing · netbirdio/netbird · GitHub · Published August 28, 2024

webpage: October 25, 2026

[bug]: Build Error With Tailwind CSS Prefix `The 'border-border' class does not exist.` · shadcn-ui/ui · GitHub · Published December 14, 2024

Participated in an issue in shadcn-ui/ui.

webpage: October 25, 2026

How to build on Windows with Visual Studio 2012 Premium? · shimat/opencvsharp · GitHub · Published March 20, 2015

Authored an issue in shimat/opencvsharp.

webpage: October 25, 2026

Add troubleshooting steps for ZLIB and MSB3073 `native_assets` folder error during windows setup · agus-works/agus-maps-flutter · GitHub · Published June 3, 2026

Participated in a pull request in agus-works/agus-maps-flutter.

webpage: October 25, 2026

Add Windows/Linux Widgetbook target · agus-works/agus-maps-flutter · GitHub · Published May 31, 2026

webpage: October 25, 2026

feat(agus): bump comaps to v2026.04.23-19 and improved layouts · agus-works/agus-maps-flutter · GitHub · Published May 5, 2026

Authored a pull request in agus-works/agus-maps-flutter.

webpage: October 25, 2026

feat(android): make compatible with Android Gradle plugin 9.1.0 · agus-works/agus-maps-flutter · GitHub · Published January 26, 2026

webpage: October 25, 2026

GitHub

webpage: October 25, 2026

Stack Overflow

webpage: October 25, 2026

LinkedIn

webpage: October 25, 2026

YouTube

webpage: October 25, 2026

Public GitHub contribution search

webpage: October 25, 2026