Gil Michael Regalado (Bangonkali)
Technology generalist with 13+ years of industry experience, deep expertise across AI Apps development, distributed computing systems, & DevSecOps.

Quick Links
https://stackoverflow.com/users/546506/bangonkali
https://www.youtube.com/bangonkalist
https://ph.linkedin.com/in/bangonkali
https://github.com/bangonkali/

Work Experience

Company: Netzon Global Tech Inc (Web)
Address: Davao, Philippines
Position / Designation: Technical Manager, Full time
Responsibilities:

- Led cross-functional teams (software, DevOps, test engineers) in the design, development, architecture, and support of diverse systems across healthcare information systems, AI/ML Integrations, AR retail applications, IoT automation (BLE 5.0 Mesh), energy storage, and other Swedish-based information platforms.
- Directed technical strategy, including architecture, platform, framework, infrastructure decisions, and stakeholder communication, balancing technical and executive engagement.
- Led cloud migration efforts, transitioning client and in-house projects to self-hosted and managed Kubernetes environments (hybrid and cloud-native solutions) with Machine Learning/AI Integrations.
- Generally, role focuses on Architecture, Template Development for Sr Devs to propagate for rest of the Team, Prototyping Architecture Proposals & general administrative & managerial tasks.

Stack: MongoDB, PostgreSQL, MySQL, Cloudflare, Angular, Flutter (Dart), React Native (Typescript), Fastapi(Python), AspNetCore(C#), TensorFlow, Langflow, Semantic Kernel, Promptflow, Ragflow, Amazon Bedrock, Azure AI Foundry, Google Gemini/Vertex, Assembly AI, ElevenLabs, Cloud (AWS, Google, Azure, Linode, OVH, VMWare based Private Cloud), Deploying Kubernetes as a service and K3s Self-Hosted, Deploying Self-hosted Gitlab, Protobuf Integration, Android Native (Kotlin), iOS Native (Swift) & more.
Period: *Feb 1, 2018 – Present*

Company: High Output Ventures (Web)
Address: Singapore
Position / Designation: Software Engineer, Home Based
Responsibilities
Developed NodeJS microservices for CRM integration with Facebook Messenger and Contact Management, using MongoDB and RabbitMQ. Deployed on Dockerized infrastructure across AWS and Digital Ocean, managed via Portainer. Led hybrid Service Bus design with Amazon SQS for scalable 3rd-party integrations. Delivered MVP rapidly in an agile environment.
Stack: MongoDB, React (FlowJS), NodeJS FlowJS Backend w/ Socket.IO, Messenger/Gmail services integrations
Period: *April 15, 2017 – January 31, 2018*

Company: Emerson Process Management - PlantWeb Solutions Group – Manila (Web)
Address: 19th Floor Cyberscape Alpha Building, Sapphire and Garnet Roads, Ortigas Center, Pasig City
Position / Designation: Test Automation Engineer
Responsibilities: I design and implement automated test systems to enhance product quality and accelerate market delivery for Emerson Process Management's hardware and software. My role focuses on automating testing for prototype, in-development, and legacy products using tools like Visual Studio CodedUI, MSAA, UIA in C#, and Selenium for browser-based products. I integrated OpenCV for image-based verification and developed a custom Test Framework, enabling Test Automation and Test Engineers to efficiently implement tests for software and hardware products.
Stack: Python, Sikuli, OpenCV, C# MS TEST, UI Automation C++, MS SQL, TFS
Period: *May 28, 2014 – Aug 8, 2016*

Company: Emerson Process Management – PlantWeb (Web)
Address: One San Miguel Avenue, Pasig City
Position / Designation: Intern Test Engineer (On-the-job training)
Responsibilities: I had the opportunity to learn on the job supporting the Emerson DeltaV Distributed Control Systems Test Engineering Team. I was tasked to assist in testing a variety of hardware systems including but not limited to DCS, PLC and a variety of Rosemount sensors and their software components. My ability to adapt and learn quickly allowed me to contribute much to the design and implementation of a test rig consisting of multiple DCS, PLC, and Sensors on the very short span of time for my internship.
Stack: C# Winforms, PLC & DCS programming, and Matlab
Period: *April 2013-June 2013 (internship during college)*

Company: City Social Welfare and Development Office
Address: Saray, Iligan City
Position / Designation: (Home Based/ Freelance) IT Personnel
Responsibilities: Developed and deployed a web-based population tracking system within 3 days in response to Typhoon Sendong, enabling real-time monitoring across 7 evacuation centers in Iligan City. The system handled over 100,000 records and streamlined data for local government and international partners (IOM, UN), significantly accelerating disaster response and recovery efforts.
Stack: AWS EC2, MySQL, Codeigniter then Yii (PHP/JS/HTML), Google Maps (JS) integration
Period: *December 18, 2011 – March 2012 (freelancing during college)*
Related Content: *A section of slides takes from an old Speaking Engagement*

Notable Personal (no-NDA or public) Projects

Title: Dash – a simple Project Management Tool
Subject: React Typescript
Description: A simple react based Project Management tool I personally developed for work to help track Waterfall Projects without needing to use expensive Subscriptions. The web app can track tasks, progress, produce Gantt chart, and have a very simple resource management feature. The project is an internal tool used for projects that do not need dedicated Trello, Jira, or MS Project. Though the Project is an internal tool, we have decided to make it public because of its open architecture wherein it does not need a backend and project files can be saved in any Personal OneDrive or Office 365 directory. I have also decided to create the tool to explore how might such a thick client webapp be architecturally designed and what modern integrations, state management libraries and integrations to use in a comparable project. The inspiration for this project came from draw.io.
***Project Link**: https://dash.netzontech.com/*

Title: Waning – 3d Graphics Web Development
Subject: Graphics Programming, Game Engine
Description: A proof of concept 3D Graphics Environment for Game Development for studying feasibility of deploying 3d based Web Applications. I was mostly interested in integrating react over a canvas that is being rendered in a separate thread. This project proves that it can work and that I have established the high-level concepts to make it work.
***Project Link**: https://github.com/bangonkali/space-demo*
***YouTube Link**: https://youtu.be/FTpA-2oCqts*

Title: Esspresif Based Wireless Controller Integration
Subject: Electronics, WiFi, Digital Design
Description: A simple proof of concept wireless controller implemented using Arduino Library. This is main done as part of my occasional hobby of tinkering with electronics and the real time web.
***Video Link: YouTube** https://goo.gl/N7E4Pu*

Title: Overwatch Testing Framework (Emerson, Internal)
Subject: OpenCV, Image Analysis, Distributed System
Description: A distributed Image Analysis System that exposes OpenCV Library Functionalities to Test Automation Engineers through a C# Nuget that extends traditional text-based verification to cover computer driven image-based verification. Image Analysis workers are coded in Python using OpenCV Library which connects to an Erlang-based RabbitMQ Message Queue that distributes work coming from Overwatch C# API Nuget that are used to extend text based CodedUI, UIA, MSAA Automation. Due to the nature of the Framework's architecture, it is scalable by just adding multiple workers.
***Video** Link: not available*
***Documentation:** Privately hosted internal tool*

Title: Hybrid FPGA & ARM based solution for Computer Vision
Subject: Microelectronics, VLSI
Description: A single Chip solution to a wide array of computer vision problems with a potential support for hardware acceleration. The prominent application is Face Detection for embedded sensor systems or for devices such as Digital Camera, Mobile Phones, and Security Camera. Was later presented to an international conference and awarded College Best Thesis Award for the Electronics and Communications Engineering Program.
***Video Link:** https://goo.gl/aHTY0L*
***Documentation:** https://github.com/bangonkali/sockitcv*

Title: Real-time and Online Data Sensor System (University Thesis)
Subject: Electronics, Software Development
Description: Developed a novel solution to allowing Sensor data for real-time and web-based consumption using NodeJS and an Arduino Board. The project was noticed by the Arduino Company and the main article is now posted on their blog. The potential application includes real-time monitoring for remote sensor networks.
***Video Link:** http://goo.gl/jlyWSK*
***Documentation:** http://goo.gl/eBO828*

Title: Power Meter System (University Project)
Subject: Electronics, PCB Design, Analog Design
Description: Developed a Power Metering System that allows for accurate Energy monitoring for residential power distributors. The project was one of the finalists for 1st PCIEERD Electronics Design Competition and I was awarded Best Presenter Special Award during its presentation at Crowne Plaza Manila Galleria, Ortigas, Quezon City, on March 27, 2014. Awarded best in presentation in the First PCIEERD Electronics Design Competition held by DOST.
***Video Link: YouTube** https://goo.gl/b0eo0V*
***Documentation: GitHub** https://goo.gl/wtmIoE*
***Featured On:** PCIIEERD DOST News Letter (Page 7)*

Title: NodeJS for Windows (Freelancing work)
Subject: Software
Description: Developed one of the first Windows-based installers for NodeJS garnering roughly **7,000** downloads in a span of 4 months until the company officially received backing from Microsoft to support Windows.
***Documentation:** Old Presentation and Google Code*
***Video Link:** https://www.youtube.com/watch?v=hrdSN9ezDl0*

Title: jVerilog (Hobby)
Subject: Electronics, Digital Design
Description: A simple UI wrapper for the Windows based port of the Icarus Verilog.
***Video Link: YouTube** https://goo.gl/mlINbd*
***Documentation: Github** https://goo.gl/1JHOQ3*

Title: Cubbieboard Project (Hobby)
Subject: Electronics, Digital Design
Description: Multiple projects based on the Chinese Development Board Cubbieboard 2.0. Applications include Computer Vision customizing the Linux Firmware.
***Video Link:** http://tinyurl.com/cubbieboard*

Generalist Skills with Hands-on Experience

- Experienced in working with software development environments/languages such as Visual Studio C#, C, C++ (MFC), Python, Java, NodeJS, JavaScript/Typescript, VB.Net, Swift, Borland Delphi, Kotlin, Swift and Mono for Linux.
- Web Site Development using ASP NET Core, PHP (CI, Symphony, Laravel), NodeJS, HTML, JavaScript/Typescript with React, React Native, Ionic, Angular, jQuery, Angular 2 and MeteorJS.
- Mobile Development in native Android (Java, Kotlin), iOS (Swift) or Hybrid (Xamarin, React Native, Ionic.
- Database Systems involving SQL (MS SQL, MySQL, PostgreSQL/ Timescale DB, IBM UDB2) and NoSQL (MongoDB, Influx DB, Elasticsearch, Redisearch, CouchDB with Hyperledger) architectures.

Distributed Computing

- Distributed Architecture Design & Implementation using Dotnet Orleans, & Dapr.
- Distributed software development using Microservice or Service Bus architecture with experience in development of applications for Real-time Industrial Monitoring and Chat Messaging Applications and relevant experience using NServiceBus, RabbitMQ, AMQP & MQTT, and Amazon SQS.

Server Management Skills

- Linux, MySQL, Apache, NGinX - Works part time designing and maintaining server systems in both Linux and Windows platforms for online clients from around the world and Local Government units.
- Experienced working with VMware vSphere (NSX), Kubernetes Clusters (k3s), Proxmox, Baremetal Hyper-V. I also maintain my own laboratory for continuing education.
- Worked extensively with Amazon AWS, Google Cloud, Azure, OVH, Linode, and collocation providers in Europe.

DevSecOps

- DevOps workflows using GitHub Actions, Bitbucket Pipelines, Azure Pipelines, Terraform, Kubernetes (k3s).
- Hands-on and client involvement with container orchestration through Ansible, Docker Containerization, Kubernetes-as-a-service, and deployment of self-hosted Kubernetes on on-premises bare-metal and private cloud infrastructure.
- Personally, led the deployment, evaluation, and validation of multiple DevSecOps, CI/CD and Integrations with a variety of existing client infrastructure and acquisition of new on-premises or cloud-based infrastructure for Software Development Workflow tools such as self-hosted Git, GitHub, Bitbucket, Gitlab, Jira, Jenkins, and TeamCity, SonarQube, Snyk, Cloudflare and a variety security product from third party vendors.

AI/Machine Learning

- Directly involved in the Design, Development, Deployment, and eventual Validation of a TensorFlow Based Health Care Decision Support System for ICU facilities.
- Personally owns, codes for and studies Nvidia Jetson Nano and Nvidia Xavier NX as a personal hobby.
- Teaches basic AI/ML Classes to friends' co-workers and got invited to speak at an online conference broadcasted live. See recording of the Live Event here.
- AI Applications Development using Semantic Kernel, Langchain, Promptflow, Autogen/AG2, Model Context Protocol (MCP), Agent to Agent Protocol (A2A) and integration into greenfield and legacy systems.
- Experience in integration of various LLM and Model Services from Amazon Bedrock, Azure AI Foundry, Google Gemini/Vertex, Assembly AI, Groq, xAi Grok Platform, Deep Seek AI Platform, ChatGPT Platform, ElevenLabs AI Platform.

Programmable Logic Controller Programming Skills

- With one semester experience, working hands on with S7-200 Siemens PLC devices.

FPGA Programming Skills

- Altera Cyclone II Starter Development Kit & Altera Arrow SoCKit Hybrid ARM & FPGA Development Board
- Synopys Verilog Synthesis and Altera Quartus, QSys, ARM SoC EDS

Microelectronics, Analog, and Digital Design Skills

- Involved in the Design and Product Development of a BLE 5.0 Mesh IoT suite of devices and application for a Swedish IoT Company.
- Involved in the Design and Product Development the application layer and interfacing with Embedded Electronics for a Home Battery Appliance for Solar Input and Electric Car charging.
- Familiarity in using Synopsys based tools for Analog and Verilog for Digital Design
- Also familiar with Proteus VSM and EagleCAD PCB Designer
- Familiar with Embedded Electronics Development Platforms such as Platform IO, Arduino, Hi-tech C, Atmel Studio, MPLabX from Microchip.

Certifications

Certified Tester Foundation Level in Software Testing
International Software Testing Qualifications Board

Certified Mobile Applications Professional - Mobile App Testing - Foundation Level iSQI GmbH,
License 14-CMAPFL-TE-67219-31

Mechanical Vibration Analyst Category II
Emerson Process Management, License MHM120954

Publications

IEEE **Integration of OpenCV and CycloneV FPGA and ARM SoC for Face Detection Application**
https://ieeexplore.ieee.org/document/10376045
Presented:
- 2023 22nd International Symposium on Communications and Information Technologies (ISCIT)
  16-18 October 2023 in Sydney, Australia
- 7th International Conference on Humanoid, Nanotechnology, Information Technology, Communication, and Control, Environment, and Management, November 12-16, 2014, Hotel Centro, Puerto Princesa, Palawan, Philippines

Education

Tertiary Bachelor of Science in Electronics & Communications Engineering
Mindanao State University - Iligan Institute of Technology (2009 – 2014)
Completed 2 Thesis:
1. Integration of OpenCV and CycloneV FPGA and ARM SoC for Face Detection Application
(Awarded College Best Thesis, Presented to BS ECE Program)
2. Smart Online & Real-time Energy Monitoring and Control System for Residential Electricity Providers
(Awarded Best Presentation on an Electronics Design Competition, BS EE Program)

Secondary Philippine Science High School – Central Mindanao Campus (2005 – 2009)
Nangka, Balo-i, Lanao del Norte, Philippines
Research work: A Student Information Management System for PSHS – Central Mindanao Campus

Awards/Honors Received

Title: Finalist in 1st PCIEERD DOST Electronics Design Competition **Issued by** Engr Raul C. Sabularse, Rowena Cristina L. Guevara, PhD **on** March 27, 2014

Title: Special Award for Best Presenter at PCIEERD Electronics Design Competition **Issued by** Atty. Edgar Allan A. Donasco, Dean of College of Engineering **on** April 7, 2014

Title: College Best Thesis Award for ECE Program **Issued by** Atty. Edgar Allan A. Donasco, Dean of College of Engineering **on** April 7, 2014

Title: DOST SEI Merit-A College of Engineering Scholar **Issued by** Department of Science and Technology **on** SY 2009-2010, SY 2010-2011, SY 2011-2012