

Michael Medrano

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Summary

A **BS computer engineering graduate** leveraging a wide range of technical, creative, problem solving, and project management skills. A persistent, detail-oriented, and critical thinker able to quickly learn new technologies and systems.

Technologies

Proficient: Python, C#, Windows OS, Unity, Git, Github, Docker, Google Workspace.

Familiar: C++, C, Linux, Make, CMake, MLFlow, DagsHub, TensorFlow, PyTorch, Gradio, HuggingFace, Infineon Designer, LTSpice

Skills

Object Oriented Programming, Procedural Programming, Version Control Systems, Machine Learning, Circuit Analysis and Simulations, Embedded Systems, Project Management, Game Programming.

Project Experience

Tiny Machine Learning Operations (TinyMLOps) Pipeline

- Led a team in building a tiny machine learning operations (tinyMLOps) pipeline for making deployment of machine learning models on microcontrollers easier and more accessible to embedded software developers.
- Improved project traceability and streamlined workflows by leading version control on **GitHub** using **Git**.
- Enhanced pipeline functionality and reliability by developing and testing robust containerization systems on **Linux** and **Windows OS** using **Docker** and **Python/Shell**.
- Increased real-time performance for microcontrollers and improved model management by integrating **TensorFlow** Lite Micro in **C** and **C++**, **MLFlow**, and **Dagshub** into the pipeline using **CMake** and **Make**.
- Trained, evaluated, and deployed a keyword-spotting model using the pipeline on an **STM32** microcontroller.

Canned Satellite Mission Project

- Worked with a team to simulate a canned satellite (CanSat) mission, overseeing design, construction, project management, and mission planning.
- Strengthened efficiency and reliability by leading the project lifecycle using **work breakdown structures**, **Gantt charts**, and **risk and quality management** charts using **Google Workspace**.
- Implemented CanSat power system and boosted performance by developing control code for duty cycles in **C** and conducting circuit simulations for a switching power supply using **Infineon Designer**.

Word Sense Disambiguation (WSD) Deep Learning Web-application

- Deployed an intuitive user interface for a Word Sense Disambiguation (WSD) deep learning application using **Python** and **Gradio** on **HuggingFace** that accurately identifies the correct meaning of words based on user input.
- Ensured reliability and functionality by maintaining the web application, providing continued reliable access and performance for users.

Independent Game Development

- Founded an independent game development organization and led a team of 4 in developing independent video games ranging from 2D platformers and top-down tower defense RTS games, to 3D first and third person games using **Unity** and **C#**.
 - Headed project management and team collaboration strategies, boosting work efficiency and quality.
 - Streamlined organization collaboration through integration of **Git**, **Github**, and **SourceTree** into the Unity project workflow and managed large asset storage by incorporating the **Google Drive** API.
 - Responsible for designing and implementing a wide range of programming **architecture**, **systems**, and **game logic** such as level managers, game state managers, entity AI and spawners, input handlers, structure managers, audio managers, and UI systems.
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Education

Bachelor of Science in Computer Engineering

University of the Philippines Diliman

2023

Relevant Coursework:

Introduction to Programming and Computation, Data Structures and Algorithms, Advanced Software Concepts, Computer Organization and Embedded Systems, Computing Architectures and Algorithms, Deep Learning, Industrial Organization and Management