

Suwisa Aitha

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Summary

M.S. student in Electrical Engineering with a concentration in Power Systems and Smart Grids (in progress). Passionate about integrating technical innovation with sustainability to deliver solutions that support environment. Possesses a strong foundation in electrical engineering design, power system analysis and proven research skills. Experienced in IoT-based embedded systems and collaborating cross-disciplinary. Open to relocate.

Education

George Mason University

Master of Electrical Engineering

Fairfax, VA

Jan 2025 – Expected May 2026

- Relevant coursework: Power system design, Power system protection, Power electronics

Khon Kaen University

Bachelor of Electrical Engineering

Khon Kaen, Thailand

Aug 2018 – Jul 2022

- Relevant coursework: Electric power system, Control systems, Electrical system design

Research

Digital Certificate Management in Smart Grids

George Mason University

Fairfax, VA

Jan 2025 – May 2025

- Conducted comprehensive review of certificate management methods (CRL, OCSP, Bloom Filter, FONICA) focusing on latency, storage, and scalability.

- Identified the FONICA computing achieves 0 ms latency for 90% of verifications and offers lowest storage.

IoT-Based Air Quality Monitoring System

George Mason University

Fairfax, VA

Aug 2024 – Dec 2024

- Conducted a literature review on IoT-based embedded systems for detecting and monitoring particulate matter and gas in Chiang Mai, Thailand.
- Identified PM2.5 levels peaked at 187.60 $\mu\text{g}/\text{m}^3$ in 2021, exceeding global safety standards ($15 \mu\text{g}/\text{m}^3$) by nearly 12.5x, highlighting urgent need for real-time monitoring.
- Proposed concept for a low-cost scalability and energy-efficiency to support community health and environmental sustainability.
- Presented findings and scholar paper at the INTO Mason Graduate Colloquium to a diverse audience.

Experience

Cooperative Education

B.S.E. Electronics Co., Ltd.

Bangkok, Thailand

Jul 2021 – Nov 2021

- Designed and tested ESP32 microcontroller-based circuits for real-time data monitoring and visualization.
- Programmed Arduino to capture sensor signals and Unity to create synchronized 3D digital twins, enabling physical-virtual interaction.
- Produced detailed 3D electrical system models to support visualization of building design and power layouts.
- Achieved approximately 85% correlation between physical circuit performance and simulated virtual response, demonstrating system accuracy and reliability.

Skills

- Programming & Tools: AutoCAD, Revit, MATLAB/Simulink, Arduino, Python, Blender (3D Modeling), Microsoft Office
- Professional Skills: Communication, Documentation, Teamwork, Multitasking
- Language: English(fluent), Thai(native)

Professional Involvement

- IEEE PES Member: Active participant in power & energy engineering community.
- Public Presentations: Delivered research findings at INTO Mason Graduate Colloquium.

Certificate

- Currently preparing for the FE exam (aiming to earn the EIT certificate by May 2026)