Hien Vu

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A highly motivated researcher with a track record of developing effective solutions in ML-driven system design, low-power wireless sensing, and optimization for electronic systems. Seeking a challenging role where I can leverage my expertise in scientific discovery, problem-solving, and cross-disciplinary collaboration to drive impactful projects and contribute to a dynamic research team.

EDUCATION

Ph.D. in Electrical and Computer Engineering (expected) 2026
Purdue University, West Lafayette, Indiana, USA

M.Sc. in Electrical and Computer Engineering 2023
University of Wisconsin–Madison, Madison, Wisconsin, USA

B.Sc. in Electronics and Telecommunications Engineering 2018
Hanoi University of Science and Technology, Hanoi, Vietnam

PROFESSIONAL EXPERIENCE

Research Assistant, Purdue University, WL, IN, USA 2023–Present

- Developed a comprehensive multimodal sensing system incorporating high-precision localization, physiological monitoring, and ML-based computer vision for identifying and tracking dairy cattle, leading to the MmCows dataset published at NeurIPS 2024.

Research Assistant, University of Wisconsin–Madison, Madison, WI, USA 2021–2023

- Engineered an energy-neutral, non-invasive wearable ear tag for real-time heat stress detection in dairy cattle, designing a wireless power system that enables five days of operation from a single 10-minute charge during milking, resulting in a publication at ACM MobiCom 2023.
- Successfully fabricated and deployed seven prototype tags in a three-week field trial at an operational dairy barn, validating real-world performance and ensuring seamless data collection through cross-disciplinary collaboration.

Research Assistant, Soongsil University, Seoul, South Korea 2019–2021

- Formulated and verified novel control strategies for internal heating of Li-ion batteries, significantly improving performance and battery lifespan in cold conditions.
- Designed a portable supercapacitor power device for military use, delivering 840W in 5-second cycles using a bi-directional buck-boost controller and a high-speed custom storage device using an FPGA.

KEY SKILLS

- **Machine Learning & AI:** ML-based computer vision, sensor data fusion, and real-time ML deployment.
- **Programming:** Advanced Python, C/C++, MATLAB, Assembly (MIPS), and Verilog.
- **Embedded Systems:** Microprocessor design, real-time systems, and sensor integration.
- **Hardware Design:** High-speed/high-power/low-power systems design, wireless sensing systems.
- **Data Analysis & Simulation:** Physical system modeling, multimodal signal processing, MATLAB simulations.
- **Collaboration:** Proven ability to work with diverse teams to develop and deploy complex systems.

SELECTED PUBLICATIONS

- **MmCows**: A Multimodal Dataset for Dairy Cattle Monitoring. *NeurIPS 2024 (Spotlight paper, top 5% ratings)*.
- **eTag**: An Energy-Neutral Ear Tag for Real-Time Body Temperature Monitoring of Dairy Cattle. *ACM MobiCom 2023 (acceptance rate 24%)*.
- Simultaneous Internal Heating for Balanced Temperature and State-Of-Charge Distribution in Lithium-ion Battery Packs. *Journal of Energy Storage 2023*.