

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

- Purdue University**, West Lafayette, Indiana, USA (expected) 2026
- Ph.D. in Electrical and Computer Engineering
- University of Wisconsin–Madison**, Madison, Wisconsin, USA 2023
- M.Sc. in Electrical and Computer Engineering
- Hanoi University of Science and Technology**, Hanoi, Vietnam 2018
- B.Sc. in Electronics and Telecommunications Engineering

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
- Designed a high - energy supercapacitor power device for military use, delivering 840W in 5 - second cycles, and developed a bi - directional buck - boost controller to ensure uninterrupted system operation.
 - Created a high - speed custom storage device using an FPGA controller and 512GB of SLC - NAND flash, optimizing signal integrity across a complex design with over 1000 components.

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.
- **Cross-Disciplinary Work:** 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*.