Ludvig Fellstrom

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY **Expected Dec 2027**
Bachelor of Science, Electrical and Computer Engineering
GPA: 3.57

Relevant Courses: Computer Systems Programming, Digital Logic and Computer Organization, Introduction to Circuits, Introduction to Operations Research, Foundations of Machine Learning, Embedded Systems

PROFESSIONAL EXPERIENCE

Ghost Social, San Francisco, CA, *AI Engineering Intern* **Jun 2025-Present**

- Designed and deployed an automated match-delivery WhatsApp AI agent in Python using AWS Bedrock + Twilio, increasing delivery reliability and engagement
- Implemented GraphRAG backend architecture integrating Pinecone + Neo4j to improve match accuracy and relationship reasoning across profiles

LEADERSHIP EXPERIENCE

CUSail, Cornell University, *Electrical Systems Lead* **Sep 2024-Present**

- Designed and programmed a custom PCB in KiCAD consolidating buck converters, Teensy microcontroller, and servo routing, significantly improving reliability and simplifying debugging
- Led embedded system development for autonomous sailboat navigation, integrating GPS, IMU, anemometer, and sail/rudder servos into the compute stack

Institute of Electrical and Electronics Engineers, Cornell University, *Social Director* **Aug 2024-Present**

- Coordinated and ran biweekly executive meetings, oversaw standing committee activities, and implemented technical outreach and community support initiatives

ECE 2400 Computer Systems Programming, Cornell University, *Teaching Assistant* **Nov 2024-Present**

- Led office hours covering dynamic memory, pointer aliasing bugs, and embedded C data-structure implementation
- Automated grading workflows using bash scripts and Git-based version control for student code repositories

RESEARCH EXPERIENCE AND PROJECTS

Body Heat Harvesting to Power Medical Wearables, ZT Group, *Undergraduate Researcher* **Jul 2025-Present**

- Created PCB layouts in Altium for TEG measurement and data logging, enabling validation of efficiency and stability under load
- Characterized organic thermoelectric device prototypes, measuring power output across variable thermal gradients through Python scripting
- Developed thermoelectric generator (TEG) circuits harvesting body heat to power wearable medical devices

Fungal Microclimate Regulator, *Independent Project* **May-Aug 2025**

- Built ESP32-based control system integrating sensors with MOSFET drivers for real-time temperature, humidity, and CO_2 regulation.
- Programmed C/C++ firmware for real-time sensor polling, PID humidity loops, and OLED status display
- Implemented ThingSpeak telemetry and GitHub Pages dashboard for remote sensor monitoring and visualization

SPECIALIZED SKILLS

Skills: Python, C/C++, Git, SQL, MATLAB, SystemVerilog, Quartus Prime, Adobe Illustrator, Microsoft Office, SPICE, Solidworks, Assembly (RISC-V), ArcGIS, Altium, Neo4j and Machining
Languages: Swedish (fluent); Spanish (intermediate)