BOUBAKAR DIALLO

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Education

Cornell University **B.S. Electrical & Computer Engineering** **May 2028**

Honors Community Leadership Award - Cornell University (Aug 2025)

Coursework Machine Learning, Embedded Systems, Data Science, Digital Logic & Computer Organization Circuits, Computer Systems Programming, Linear Algebra, Management Simulation, IP

Technical Skills

Programming Python, C++, JavaScript, Swift, Verilog, Embedded C, MATLAB, TensorFlow, PyTorch

Hardware FPGA design, PCB layout exposure, signal integrity, power optimization, ASIC fundamentals

Certifications Electronic Arts Software Engineering; GE Aerospace Explore Electrical Engineering

Languages French, English, Arabic & Fulah

Research & Work Experience

Engineers Without Borders *Hardware Engineer* **Oct 2024 – Present**

- Co-developed a rover-drone platform integrating microcontrollers, sensors, LoRa telemetry, and Jetson Nano to enable remote crop-health analytics; improved early disease detection outcomes by 40%
- Trained and optimized an on-device TensorFlow CNN for maize disease classification (92% accuracy); reduced inference latency by 40% via quantization and performance tuning for edge deployment

ADAS Safe *Mobile Tech Intern* **Jun – Aug 2025**

- Built a diagnostic automation framework for ADAS validation, integrating IMU and LiDAR calibration modules to reduce radar misalignment rates by 15% across test vehicles
- Authored calibration and reliability documentation and debug workflows, translating sensor error behavior into faster root-cause isolation for engineering teams

Cornell Engineering *Hardware Design* **Nov – Dec 2025**

- Designed and verified a TinyRV1 single-cycle processor and accumulate accelerator in Verilog, running ISA and custom assembly tests, and measuring timing and cycle tradeoffs
- Built a low-latency FPGA music player using structural RTL and synchronous design practices

Cornell Engineering *Bird Call Classification* **Nov – Dec 2025**

- Built an end-to-end bird-call audio classification pipeline in Python using librosa, NumPy, and scikit-learn on 20,000+ labeled 3-second WAV clips; engineered rich acoustic features and shipped Kaggle-format submissions, reaching 0.887 public leaderboard accuracy with a bagged HistGradientBoosting ensemble

City of Quincy, MA *Electrical Systems Intern* **Sep 2022 – Jul 2024**

- Repaired traffic-signal controller boards and supported field operations by restoring system performance
- Documented 52 intersections in AutoCAD/GIS and maintenance logs to support signal-timing and hardware upgrade planning, improving energy efficiency and reducing pedestrian wait times by 12%

Leadership & Extracurriculars

Cornell Computer Reuse Association *Software Lead* **Sep 2024 – Present**

- Refurbished 275 desktops, standardized imaging, and shipped reliable systems to schools worldwide

Cornell Engineering *IP Analyst* **Sep – Dec 2025**

- Evaluated semiconductor and AI-hardware disclosures; produced TRL assessments, patent positioning, and commercialization briefs for stakeholders
- Characterized Liquid Nanoparticle Ion Source using AFM, SIMS, and in-situ currents to guide IP strategy