Autrin Hakimi

(515) 815-1016 | autrinhakimi@gmail.com | LinkedIn | GitHub | Website

PROFESSIONAL PROFILE

Embedded software engineer building real-time automation and control systems for semiconductor manufacturing. I develop Python and C/C++ software coordinating robots, vision sensors, and processing equipment in production workflows. Published researcher (ACM SIGSPATIAL 2025) with experience in distributed computing across 64 NVIDIA A100 GPUs. Strong foundation in POSIX concurrency, socket programming, RTOS concepts, and hardware-software co-design. Seeking to apply embedded systems expertise to high-reliability production environments.

TECHNICAL SKILLS

Embedded & Systems C/C++, Python, POSIX concurrency (threads, semaphores, mutexes), RISC-V, socket programming, real-time control software, hardware-software integration

Automation & Robotics Robot workflow orchestration, vision-guided positioning, HMI/GUI diagnostics, UR10e arm, ROS (rospy), OpenCV, MoveIt

Full-Stack & Web JavaScript, HTML, CSS, React, Python Flask, Tkinter, Node.js, REST APIs, SQL, Android

ML & Data Pipelines PyTorch, DGL, scikit-learn, distributed training (64-GPU), NetworkX, Pandas, NumPy

DevOps & Tools Docker, Git, CI/CD pipelines, Linux/Unix, MySQL, Snowflake, Azure, GCP, Jira

EDUCATION

B.S., Computer Science Aug 2021 - May 2025

Iowa State University | GPA: 3.70/4.0 | Magna Cum Laude | Dean's List Ames, IA

PROFESSIONAL EXPERIENCE

Systems Engineer, Embedded Software Jan 2026 - Present

ASM America *Phoenix, AZ*

- Build **real-time automation software** in Python coordinating robots, vision sensors, and semiconductor processing equipment in production manufacturing workflows.
- Develop **ML-driven inspection models** for precision component metrology; build full-stack internal tooling with **JavaScript, HTML/CSS frontend and Python Flask backend**.
- Implement **industrial HMI systems** supporting diagnostics, operator workflows, and serviceability for embedded equipment platforms.
- Design **workflow orchestration and error-handling logic** for sequential robot operations and vision-guided positioning with sub-millimeter accuracy.
- Manage robotics project data using **SQL databases**; own end-to-end delivery from algorithm design to production deployment.
- Partner cross-functionally with mechanical, electrical, and process engineering teams to **integrate control software and validate system behavior** in production.

AI Undergraduate Researcher Aug 2024 - Nov 2025

Iowa State University, SwAPP Lab *Remote*

- Co-authored **'HydroGAT'** [paper, code] accepted at **ACM SIGSPATIAL 2025**.
- Achieved **15x speedup** implementing distributed training across **64 NVIDIA A100 GPUs** on the NERSC Perlmutter supercomputer.
- Engineered end-to-end data pipelines (PyTorch, DGL, NetworkX, Pandas) for large-scale hydrological datasets; processed geospatial data with xarray and Rasterio.
- Automated preprocessing and training workflows via **Bash scripting**, cutting setup time by 40%.

Software Development Intern May 2024 - Aug 2024

BuilderTREND *Omaha, NE*

- Designed and shipped a **React-based job proposal template**; developed full-stack features in JavaScript, TypeScript, and C# (.NET).
- Migrated legacy ASP pages to React; collaborated cross-functionally in **Kanban/Scrum sprints**.

Data Science Intern May 2023 - May 2024

Alliant Energy *Remote*

- Developed **predictive ML models** (Random Forest, SVM) analyzing electricity usage data for 995K customers in Snowflake.
- Predicted EV ownership for customer segmentation; recognized by Director of Data Analytics for impactful insights.

SELECTED PROJECTS

Joseph Hoane: Autonomous Robotic Chess System [code]

- Built fully autonomous system: **real-time piece recognition** (OpenCV), move calculation, and **UR10e robot arm control** (ROS, MoveIt, Python).

xv6-RISC-V Operating System Extensions [code]

- Extended xv6 kernel with custom system calls, process scheduling, and memory management in **C on RISC-V architecture**.

8-Puzzle Solver: AI Search [code]

- Implemented BFS, IDS, and A* solvers; achieved **60x speedup** via multiprocessing.