Jeremy Ky

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EDUCATION

University of Virginia — Charlottesville, VA

B.A. Computer Science, B.A. Applied Statistics | GPA: 3.8/4.0 — *Aug. 2023 – May 2027*

- **Relevant Coursework:** Software Engineering, Web Development, Data Structures, Computer Systems, Machine Learning, Natural Language Processing, Reinforcement Learning, Autonomous Driving, Generative Models (G)
- **Head Teaching Assistant:** CS 3120: Theory of Computation, **500+ students**

TECHNICAL SKILLS

Programming Languages: Python, Java, C/C++, JavaScript (TypeScript), SQL, MATLAB, R
Frameworks & Libraries: React, Next.js, FastAPI, Flask, NumPy, Pandas, scikit-learn, PyTorch, TensorFlow, OpenCV, Hugging Face, OpenAI API
Cloud & Infrastructure: AWS (Lambda), Docker, Kubernetes, Linux, PostgreSQL, MySQL, CI/CD, Git/GitHub
Development Tools & Skills: RESTful APIs, Unit Testing, Version Control, Object-Oriented Programming

EXPERIENCE

AI/ML Research Intern — Mar. 2025 – Present

FloodWatch (floodwatch.io) — Advised by Dr. Rich Nguyen — *Charlottesville, VA*

- Contributed to building **backend + frontend services** (**TypeScript**, **Next.js**, **tRPC**, **AWS Lambdas**) for an NSF-funded flood early warning system in smart cities.
- Developed and deployed **deep learning** and **statistical forecasting models** to predict and serve real-time flood severity from weather, satellite, and IoT sensor data.
- Co-authored an **IEEE CAMA 2025** paper on an unsupervised multimodal statistical framework for flood severity.

Software Engineering Intern — June 2024 – Feb. 2025

Dewberry Engineers — *Fairfax, VA*

- Developed a **secure analytics web platform** with **React, Flask, PostgreSQL, Docker, and Kubernetes** to automate financial document processing, enabling multi-user collaboration and reducing reporting time by 50%.
- Built a **document intelligence pipeline** integrating **OCR (Tesseract)** and the **GPT-4 API** for automated text extraction, entity recognition, and anomaly detection.

Software Engineering Intern — May 2025 – Present

Anote.ai — Breakthrough Tech AI Program — *Remote*

- Developed and integrated a **benchmarking suite** (**Flask, MySQL, React**) to evaluate API-submitted AI models across tasks (web, Q&A, image classification, etc.) with an interactive leaderboard.
- Implemented robust **evaluation metrics** and integrity safeguards to ensure fair comparisons across diverse models/datasets and prevent metric gaming.

Research Assistant — June 2024 – Present

UVA Link Lab, Advised by Dr. Yen-Ling Kuo — *Charlottesville, VA*

- Built a **reinforcement learning data collection pipeline** to research self-driving policy interpretability; engineered a custom **driving rig** and fine-tuned MetaDrive **simulators** for replay/control of **10,000+ Waymo** scenarios.
- Applied **behavioral transformers** and adversarial imitation learning residual policies to gather expert-like data.

Research Assistant — Jan. 2024 – Feb. 2025

UVA School of Medicine, Advised by Dr. David Acunzo — *Charlottesville, VA*

- Published a psychiatric journal paper on a **deep learning pipeline** (CNNs + SBERT), enabling automated analysis of **100,000+** experimental images and text records.

PROJECTS

FireGuard | *3rd Place @ VTHacks13 — Python, Next.js, React, FastAPI, Computer Vision, LLMs, Networking*

- Developed a smart firefighter helmet fusing **LiDAR, radar, camera, and IMU** with **deep learning** and **real-time networking** to map (**SLAM**) smoke-filled environments and enhance navigation.
- Integrated **YOLOv5** for object detection, a lightweight **LLM (DistilGPT-2)** for semantic room classification, and **Whisper** for speech-to-text transcription to improve firefighter communication.
- Built a **Next.js + React command dashboard** with a **FastAPI backend** to stream multi-sensor data and support mesh-networked team coordination.