Yuyang E. Lou

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LinkedIn • GitHub • Website

EDUCATION

University of Washington | Bachelor of Science in Computer Science — Expected Graduation: May 2027

SKILLS

Languages: Java, Python, C++, SQL, JavaScript, HTML/CSS
Libraries & Frameworks: Node.js, React.js, PostgreSQL, NumPy, OpenCV, PyTorch
Tools & Technologies: AWS (EC2, Lambda, S3), Kubernetes, Docker, Firebase, Junit, PyTest

WORK EXPERIENCE

Open Source Contributor
Duck DB | Remote — May 2025 – Now

- Debugged **cross-language bindings** (C++/Python), strengthening integration between core systems and user APIs.
- Improved **data pipeline reliability** by addressing inconsistencies in how missing and special values were handled.
- Enhanced **developer experience** by documenting strict API rules, preventing misuse and improving clarity.

Software Engineering Intern
University of Washington / Traffic Department Project — June – September 2025

- Developed a **deep learning model** for dashcam traffic sign detection, improving accuracy for transportation research.
- Built a **web-based annotation tool** linking detected signs with Google Street View and geospatial data.
- Collaborated with university researchers and the local Department of Transportation to support infrastructure planning.

Research Assistant
Meta Fundamental AI Research| Seattle, WA — January- June 2025

- With Professor Ruta Desai at Meta FAIR, designed Pref-LSTM, a hybrid memory architecture combining BERT-based preference detection with LSTM-based storage, improving long-horizon preference recall in LLMs.
- Curated and annotated **8.4K+ dialogues**, enabling high-quality evaluation of preference-driven conversational models.
- Achieved **92% accuracy** on custom dataset with BERT-based preference detector.

Vision Team Member — September 2023 – September 2025
Advanced Robotics at University of Washington| Seattle, WA

- Developed a **real-time object detection system** using YOLOv8, enabling reliable adversarial robot plate recognition.
- Calibrated robot trajectory through signal processing techniques, diminishing noise in robotic path prediction by 45%.
- Built an internal annotation platform (Next.js, Prisma, SWR, PostgreSQL) that streamlined data labeling workflows.

Software Engineer Intern — May - September 2024
Fechii Fragrance & Flavors | Hybrid

- Used **AWS S3** to store large mass spectrometry collection database and fragrance formula repositories.
- Used **AWS EC2** for fast, consistent data processing pipeline that executes spectra-matching engine written in C++.
- **Migrated visualization tools** from offline software to a web-based platform using React.js and Plotly.js.
- New Software increased the chemical report generation by **66%**, from 120 minutes to 40 minutes.

PROJECTS

No-Deception

- Built a **google extension** that fact-check internet information against scientific articles using RAG with LLMs.
- Maintained a backend vector database using ChromaDB and python that hosts vectorized embeddings of scholar articles.
- Created frontend using react and REST API and deployed them as chromium based browser extensions.

ScanLite

- Implemented an **Extended Kalman Filter**, fusing 6DOF gyroscope and depth camera to perform 3D pose estimation.
- Performed **Iterative Closest Point (ICP)** algorithm in parallel to handle gyroscope drift and computational delays.
- Built an **interactive visualization interface** using Open3D (and PyQt) to render scanned objects and pose updates in real time