Eric Liu

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Technical Skills

Languages & Tools Python, C/C++, Swift, Java, R, Matlab, Bootstrap, Flask, Dash, Postgres, SQL, Redis, Nginx, Jenkins, Cirq
Machine Learning PyTorch, Keras, SciKit-Learn, AutoGluon, CoreML, Transformer, ML Optimization, Optuna, Ray Tune
Cloud/Web Amazon Web Services (AWS), S3, Lambda, API Gateway, DynamoDB, EC2, EKS, Kubernetes, Hadoop, Spark
Technical Skills Automation, Instrumentation, System Design/Integration, Project Management, Manufacturing, Pilot

Experience

Apple AI/ML for RF Engineering *November 2024 – Present*
- Deep learning models for hardware design, performance optimizations, instrumentation accuracy, and manufacturing efficiency.
- AI/ML infrastructure for auto-ML, architecture exploration, hyperparameter tuning, model optimizations, data processing.
- Lead data infrastructure engineers, architect data pipeline solutions for automated telemetry, model generation, evaluation.

Apple AI/ML/SW Engineer *March 2022 – November 2024*
- Established foundations of AI/ML for RF engineering, developed and deployed the first model for RF hardware engineering.
- Architect and develop AI/ML infrastructure, lead and manage cloud infrastructure engineering team, manage outage response.
- Oversee software projects from design to deployment, provide guidance and oversight for engineering initiatives.

Apple RF System and Software Engineer *June 2017 – March 2022*
- Develop automated testing and calibration algorithms for RF systems. Debug baseband, antenna, RF and EE hardware issues.
- Provide system-level expertise for design and product development, instrumentation, testing, and calibration solutions.
- Develop and manage cloud infrastructure critical to product development, engineering, manufacturing.
- Deployment and debug in manufacturing/factory environments, managing cross-functional, manufacturing/factory operations.

Apple RF Cellular Test & Automation Engineering *August 2016 – December 2016*
- Develop test application to automate CMW500 for testing cellular technologies (LTE, GSM, UMTS).
- Work with RF engineers to develop cellular tests from 3GPP and system requirements, correlation studies between solutions.
- Work with contract manufacturers to validate and deploy RF test solution in production environments.

ON Semiconductor DSP Firmware and Algorithm Development *August 2015 – December 2015*
- Develop multi-core DSP audio encoding/compression (G.722, CVSD), custom codecs to increase compression, retaining quality.
- Evaluate codec performance, develop firmware tests, fixes for reliability and security. Optimize assembly and C code.
- Develop algorithms for memory management to optimize usage and read/write, data transfer speed.

Department of National Defence Defence Research & Technical Lead *January 2015 – May 2015*
- Design and develop high performance and versatility simulator for sensor data fusion research in intelligence aircraft (ISR).
- Develop algorithms to track targets, identify/assess threats, predict trajectory, conforming to NATO military standards.
- Engage with defence companies, foreign engineers/scientists, military to cultivate future research opportunities.

Broadcom Network Security Software Engineering *May 2014 – August 2014*
- Develop tests, fix bugs for access and content control, encryption, security vulnerabilities and exploits, system crashes.
- Create comprehensive automated and manual tests and plans based on future project road map.

Siemens Network Hardware/Firmware Engineering *August 2013 – December 2013*
- Generate, analyze packets to debug complex computer networks. Develop and test recovery systems and solutions (PRP, HSR).
- Implement and tested high precision clock synchronization, contributing to IEEE 1588 Precision Time Protocol (PTP).

Siemens Network Software Engineering *January 2013 – April 2013*
- Develop automated tests, fix network security and reliability bugs, develop libraries for IETF protocols.
- Back-end server and in-house tools development for automating calculations and documentation.

Education

University of Illinois Urbana-Champaign **Masters**
Computer Science and Data Science – Deep Learning, Statistical Machine Learning, Natural Language Processing
University of Waterloo **Bachelors**
Electrical Engineering – Radio Frequency, Wireless Systems, Computer Architecture, Integrated Circuits

Selected Projects

Quantum Computing Calculator (Quantum Logic Circuits) *Personal Project: Dec 2024*
Movie Recommendation Web App (Recommender Systems) *Statistical Learning: 2022*
Survival Prediction Using Transformers (SurvTRACE Analysis, Transformers, BERT) *Deep Learning: 2022*
Intelligent Web Link Browsing (Information Retrieval, Recommender Systems) *Information Retrieval and Data Mining: 2021*
ACTR - Asteroid Characterization Through Reflactance (Aerospace, DSP, Sensors) *Space Apps Hackathon: 2016*
MyOrchestra: Virtual Orchestra (Sensors, Data Fusion, DSP, IoT) *WearHacks Hackathon: 2016*

Research

Memory Coherency and Approximate Caching *University of Waterloo - Department of Electrical and Computer Engineering: 2016*
Effects of Haptic Feedback in Virtual Reality *University of Waterloo - Department of Electrical and Computer Engineering: 2016*
Data and Sensor Fusion for ISR Systems *Department of National Defence - Defence Research and Development Canada: 2015*