Yu-Ju Lee

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Summary

Systems/platform engineer spanning SoC/driver bring-up, low-level debugging on Linux, and cloud operability. Built production systems from silicon validation and customer-site performance to GCP services with monitoring/alerting and infrastructure as code.

Technical Skills

- Systems: Linux, firmware, device drivers, SoC bring-up/validation, hardware-software co-design, concurrency/locking, performance analysis
- Networking: TCP/UDP, packet-level debugging (tcpdump/Wireshark), throughput/jitter testing and tuning (iperf/Ixia)
- Observability/Operations: production diagnostics, monitoring/alerting (GCP Operations), incident/debug workflows
- Cloud & Infrastructure: GCP (Cloud Run, BigQuery, Monitoring), Terraform, Docker, CI/CD, RESTful APIs
- Programming Languages: Python, Go, C/C++, Shell

Work Experience

Software Engineer - Verily Life Sciences, South San Francisco, CA, USA Nov 2022 – Present

- Translated product requirements into data models and query patterns on GCP, addressing optimization, indexing, and scalability constraints for a distributed data platform.
- Designed and implemented Go-based data processing pipelines for rule-based filtering/grouping, extraction, and prefetch optimization; built unit and integration tests with CI/CD via GitHub Actions. Deployed across multiple programs, optimizing for API quota constraints and throughput requirements.
- Owned production operability for multi-stage pipelines: built monitoring dashboards and alerting on GCP (Cloud Run, Cloud Monitoring, BigQuery) managed via Terraform; defined provenance tracking and data quality validation checks to improve auditability, prevent silent regressions, and increase release confidence.

Software Developer - Epic Systems, Madison, WI, USA Mar 2021 – Oct 2022

- Developed and maintained FHIR-based REST APIs and international profiles (USCDI, Netherlands) for Epic's EHR platform during rapid adoption. Implemented 17 FHIR resources and 2 production profiles; contributed to a platform that scaled from 12B to 22B+ annual transactions and 700+ third-party applications.
- Optimized database query patterns and data access logic on InterSystems Caché, reducing memory footprint by one-third and improving response times for latency-sensitive production endpoints.

Systems Engineering Internship - Qualcomm Atheros, San Jose, USA May 2018 – Aug 2018

- Developed adaptive Wi-Fi noise immunity control algorithm using Kalman filtering to track PHY error counter variance patterns. Replaced traditional hard-threshold approach with dynamic optimization.
- Validated performance in a controlled test environment using a shielding box, signal generator, and OpenWRT access points to simulate interference scenarios; selected for internal patent review

System Engineer - MediaTek, Taiwan April 2011 – July 2015

- Led FPGA emulation and silicon validation; debugged low-level issues (register/protocol logic, USB/PCIe) and validated throughput/latency in shielded environments and at customer sites.
- Developed firmware and Linux/Windows device drivers with microsecond-level control loops and hardware interfaces (USB/PCIe); built Python automation for driver testing, chip bring-up, and system validation.
- Owned end-to-end delivery of Wi-Fi/Bluetooth/LTE coexistence for a flagship combo chip, making architectural decisions across hardware logic, firmware, and protocol coordination.
- Led full product lifecycle through mass production, coordinating across HW/FW/SW/QA teams. Provided technical presentations and integration support for tier-1 customers (Sony, Samsung, LG).

Education

University of Colorado Boulder – Ph.D. Computer Science Aug 2015 – Aug 2020
University of Southern California – M.S. Electrical Engineering Aug 2008 – May 2010
National Chung Cheng University – B.S. Electrical Engineering Sep 2001 – Jun 2005

Selected Publications & Patents

- Peer-reviewed publications in venues such as IEEE Sensors Journal, Engineering Applications of Artificial Intelligence, IEEE Transactions on Mobile Computing, Radio Science, and others, on topics including interpretable ML for geophysical data, satellite/ionospheric applications, and mobile/IoT sensing.
- 7 U.S. patents on Wi-Fi link adaptation, wireless coexistence, antenna deployment, and sounding methods for multi-radio communication devices.