Richard Xu

CONTACT

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SKILLS

Languages
- Python
- Java/Kotlin
- Go
- C++
- Javascript/Typescript
- Swift
- SQL

Frameworks
- React Native
- Apache Kafka
- Kubernetes
- Terraform
- AWS: EC2, S3, Lambda
- Docker
- Django
- Maven
- MongoDB

Tools
- JIRA
- Jenkins
- Github Enterprise
- Splunk
- Grafana
- Figma

WORK EXPERIENCE

Tesla, Material Flow Services Team
Software Engineer / Fremont, CA / 2023 - 2024

- Created an external facing API to automate shipments from third party suppliers, increase the efficiency of the Reno factory supply chain by 20%
- Implemented a inventory count verification system to improve the Fremont Model three manufacturing line uptime at >98%
- Added internal API endpoints for service centers to consolidate our global inventory system and to act as an internal auditing tool for manufacturing metrics

Verily Life Sciences
Software Engineer / South San Francisco, CA / 2018 - 2021

- Wrote custom FW timers, RNG, and client-side encryption for a low cost insulin pen in collaboration with Sanofi to reduce power usage by 30%
- Configured hardware E2E tests, maintaining >90% feature coverage for FDA V&V
- Gathered user experience feedback from clinical trials with >1000 patients
- Built the upgraded internal BLE 5.0 framework for nrf52 series microcontrollers to be used across all Verily hardware projects
- Prototyped the iOS application for an improved high frequency response hearing aid, including a novel sync protocol to reduce latency to under 3ms

Lawrence Berkeley National Laboratory, China Energy Group
Research Assistant / Berkeley, CA / 2016 - 2017

- Developed spatial analysis workflows using GIS software for tracking energy flow
- Created interactive maps for geospatial visualizations using ArcGIS
- Identified the potential for 15-25% energy infrastructure reduction in Beijing

PERSONAL PROJECTS

Reinforcement Learning Agent for the Game of 2048
Spring 2024

- Implemented custom OpenAI Gym environment to minimize step time computation
- Designed an optimistic temporal difference reward algorithm to train the agent on
- Achieved a >60% rate to reach the 16384th tile

Microfluidic Gradient Generation for MIC detection
Fall 2016

- Simulated nonlinear gradient generation for microfluidic concentration profiles
- Used generated α-values to fabricate microfluidic device using soft lithography
- Generated logarithmic gradient had $R^2=0.983$ and exponential $R^2=0.999$

AWARDS

Detection of Autonomic Immune Dysfunction in Pediatric Patients
Big Ideas, Hardware for Good Finalist / Awarded Honorable Mention / Berkeley, CA / April 2017

- Worked with Parvin Azizi, UCSF, to needs find, prototype and iterate on a Galvanic Skin Response Detector accurate to within 2.7Ohms
- Awarded a Provisional Patent as of May 2017 and $2000 for continuation of Project

EDUCATION

University of California, Berkeley
B.S. Bioengineering with a concentration in Computational Biology
Minor Electrical Engineering and Computer Science