Richard Xu

CONTACT

- www.richardxu.me
- +1 (425) 623 6872
- richardxu@berkeley.edu
- Linkedin / richardxu1
- Github / xurichard
- Instagram / richardxuxu

SKILLS

Languages
- Python
- Java/Kotlin
- C++
- HTML/CSS/JS
- Swift
- SQL

Frameworks
- Jenkins
- Github Enterprise
- AWS: EC2, Lambda
- Django
- Maven
- MongoDB
- Apache Kafka

Tools
- JIRA
- Git
- Splunk Enterprise
- Figma

Hardware
- Bluetooth
- Intel NUCs
- nrf52 microcontroller
- Analog discovery 2

EDUCATION

University of California, Berkeley
Berkeley, CA / Degrees awarded August 11, 2017

B.S. Bioengineering with a concentration in Computational Biology
Minor Electrical Engineering and Computer Science

WORK EXPERIENCE

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

Integrated part pick, drop and status features to support Reno factory supply chain
Deployed part cycle counting feature to improve manufacturing line uptime to >98%
Created an external API to enable third party suppliers to automate shipments
Built an internal auditing tool to give the finance team manufacturing metrics
Added internal API endpoints for service centers to consolidate our inventory system

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

Prototyped initial internal BLE 5.0 framework for nrf52 series microcontrollers
Wrote custom FW timers, RNG, client-side encryption 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 iOS component of a novel sync protocol with existing hearing aid hardware

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
Indentified 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 Pediactric 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 this problem
Developed a Galvanic Skin Response Detector accurate to within 2.7Ohms
Awarded $2000 for continuation of Project, Provisional Patent as of May 2017