ROY YI

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EDUCATION:

Bachelor of Science in Computer Science (Expected June 2022) Cumulative GPA: 4.0
University of California, Davis

SKILLS:

- **Languages**: C, C++, Python, Java, JavaScript, HTML/CSS, BASH, Ruby, Go, SQL
- **Tools:** Unix/Linux, Git, Vim, AWS, Terraform, Docker, Ansible, Datadog, Sentry, Flask

EXPERIENCE:

Site Reliability Engineer Intern, *Instructure Inc.* June 2021 - present

- Helped build Canvas, a cloud app that uses distributed systems to serve 30+ million students
- **Focal performance**: Investigated app server slowdown after code migration to new **OS**
- Tweaked **kernel**/**Ruby** parameters, conducted load testing in Jmeter, collected metrics in Datadog, and presented visual summary in Matplotlib for team to evaluate solutions
- Launched memory allocation fix that increased performance of all app servers by **10%**, reducing needed server count and saving over **$30,000** per month
- **Predictive auto scaling**: Queried timescale data stored in **Postgres** to predict number of requests per app server using **ML** regression models in **Tensorflow**/**Keras**
- **Image cleaner:** Built **Python** script to clean old EC2 AMIs and associated S3 snapshots

Undergraduate Researcher, *LPW Chemistry Group* January 2020 - present

- Built the Nudged Elastic Band (NEB) algorithm in geomeTRIC, an **open source** computational chemistry package, in collaboration with chemistry PhD students
- Created molecular dynamics simulations in **Python** to model reaction pathways
- Parallelized jobs to run across distributed **GPU** nodes in the **HPC** cluster using QCFractal
- Automated calculations performed by command line applications using **BASH** scripts

Code Coach, *TheCoderSchool Folsom* August 2020 - present

- Provided high quality instruction by designing a custom curriculum for each student
- Built projects and assigned homework in **Python**, **JavaScript**, **HTML/CSS**, and **Scratch**

Math Instructor, *Mathnasium of Davis* August 2020 - June 2021

- Taught math concepts ranging from high school algebra/geometry to college calculus

Crew Member (service), *Golden State McDonald's* July 2018 - March 2020

- Placed customer orders at register and worked with team to prepare and deliver orders

PROJECTS:

- **Simple Shell**: Implemented a shell in **C** using **OS syscalls** with support for piping, output redirection, and environment variables. Partner project received top score out of 75 teams.
- **Hexapawn AI**: Built an AI in **Python** using minimax algorithm and alpha beta pruning that plays a game of hexapawn at a level comparable to human play for large board sizes.

AWARDS:

- University Honors Program, Dean's Honor List (2018, 2019, 2020)
- James and Leta Fulmor Scholarship, Hubert Wakeham Scholarship, Student Scholars Fund