CHARLIE SHOU

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EDUCATION

University of California Berkeley, California Expected 2024
BA in Computer Science, 4.0/4.0
Relevant Coursework: Data Structures, Circuits, Linear Algebra, Differential Equations, Discrete Mathematics, Probability Theory, Efficient Algorithms, Machine Structures, Artificial Intelligence, Random Processes, Operating Systems, Machine Learning, Computer Security, Computer Vision, Databases
Clubs and Societies: PlexTech, Upsilon Pi Epsilon (UPE), Cal Dragon Boat

EXPERIENCES

Software Engineer Intern, Splunk - San Jose, CA May 2023 - August 2023

- Designed a new app analyzer for Splunk AppInspect to integrate with internal product security toolkits, enhancing the security vetting check suite performed on 1000+ apps throughout Splunkbase
- Created extensive CI/CD pipelines, identifying critical load balancing and dependency failures within the software ecosystem
- Evaluated redundancies within existing AppInspect check suites and compiled into report for future migrations
- Utilized Python, Kubernetes, Apache Pulsar, Docker, Protobuf, and Gitlab

Undergraduate Researcher, UC Berkeley, School of Optometry - Berkeley, CA May 2022 - August 2023

- Working under Prof. Stella Yu and Meng Lin to track the dynamics of the tear film lipid layers using computer vision
- Developed algorithms to detect key feature points and perform frequency-based image filtering, improving movement tracking
- Refining deep learning algorithms for dense optical flow using sparsely annotated video samples
- Published overview of methods and preliminary results to NeurIPS workshop as second author

Software Development Intern, Amazon - Seattle, WA May 2022 - August 2022

- Designed a service to monitor production health for an internal canary testing framework to service 20+ teams across Alexa
- Created backend services to fetch canary executions, alarms, and performance metrics and deployed to centralized platform for all Alexa SAIF services
- Developed scalable web console to utilize the API capable of cross regional calls and access control
- Utilized Java, Typescript, React, AWS Lambda, CloudWatch, CloudFormations, Step Functions, and API Gateway

Software Engineer Intern, Polyture (now AskEdith) - Santa Clara, CA May 2021 – May 2022

- Overhauled Polyture's data infrastructure design platform with a new tech stack to improve scalability and maintainability
- Developed system design docs and created CLI automation tools to accelerate the CI/CD process and ensure code quality
- Implemented backend data visualization/transformation functions and performed frontend integrations
- Utilized Typescript, React, Redux, NumPy, Pandas, Spark, and FastAPI

Software Engineer Intern, Precise Software Solutions - Rockville, MD May 2020 – August 2020

- Developed the foundation of the counterfeit drug detector, a patent-pending innovation project
- Created the basis for the frontend application and performed API integrations to allow for sample uploading, mobile app and minicomputer interfacing, and user authentication
- Formalized project into final presentation, recognized with ACT-IAC Incubator Award for innovations not yet in production
- Utilized Javascript, React, Flask, Firebase, and Google Cloud Platform

Student Researcher, University of Maryland - College Park, MD June 2019 – September 2019

- Coordinated research efforts on the application of machine learning in Ramsey theory under the guidance of Prof. William Gasarch
- Explored the effectiveness of adversarial search and reinforcement learning algorithms on evaluating the game states of Ramsey and Van der Waerden games and developed a Q-learning algorithm to produce empirical evidence for Ramsey game numbers

PROJECTS

Smile - Programming Language/Interpreter

- Used Python to develop an interpreter for Smile, a language designed around the use of binary operations
- Added support for conditionals, user-defined functions, variable declaration, and other common features

SKILLS

Languages: Python, Go, Java, Typescript/Javascript, SQL, Lisp/Scheme, HTML/CSS, C, RISC-V
Technologies: Git, Kubernetes, Docker, React, Firebase, OpenMP, Flask, Protobuf, Pulsar, MongoDB, MySQL, Google AutoML, AWS (Glue, S3, EC2, RDS, CloudFormations, API Gateway), Vue, Pandas, Spark, NumPy