Jingchao Zhou

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Experience

Nuro Mountain View, CA

Software Engineer, Onboard Infrastructure ***June 2021 – Present***

- Led the analysis efforts for improving the speed and reliability of the vehicle start-up process, which involved cross-functional collaboration with stakeholders from operations, hardware, and autonomy teams
- Architected and implemented an Extract, Transform, Load (ETL) pipeline that processes 1M+ raw vehicle data daily from the fleet through **Google Pub/Sub** into reliability and performance metrics
- Created and deployed a fault-injection framework to scalably test 70K+ failure modes across the autonomy stack in the simulation environment, instrumental in risk assessment and mitigation
- Engineered a framework to enable runtime performance analysis of autonomy modules in cloud-based simulation, achieving a 50% reduction in turnaround time through process parallelization
- Revamped the weekly onboard systems report, cutting preparation time by 60% with **Kubernetes**, **gRPC**, and **ReTool** for enhanced process efficiency

Mastercard Data & Services Arlington, VA

Software Engineering Intern ***June 2020 – August 2020***

- Spearheaded a front-end overhaul of the Test & Learn software, utilizing **React** and **TypeScript**, which enhanced user experience and interface responsiveness
- Engineered a monitoring tool that leverages **Splunk** to identify persistent unit test failures from Jenkins logs, with automated Slack notifications to alert relevant teams, streamlining the debugging process

Nutanix San Jose, CA

Software Engineering Intern ***May 2019 – August 2019***

- Engineered a **gRPC**-based microservice to streamline Virtual Machine (VM) backup management, facilitating asynchronous backup scheduling among VM hypervisors and the central backup service
- Revised the backup process by implementing a new workflow that clones VM instances to images, improving data integrity compared to traditional immutable snapshots

Research

Berkeley EECS Department Berkeley, CA

Graduate Researcher ***October 2020 – May 2021***

- Co-authored and published *WIP: The Cyber-Physical Immune System (CPIS)* in *Proceedings of the 2021 International Conference on Embedded Software (EMSOFT '21)*
- Proposed and validated a conceptual approach to secure Cyber-Physical Systems (CPSs) by deploying an independent network of monitoring components that adapts to the changing environment and reports threats or anomalies

Duke University I^3T Lab Durham, NC

Undergraduate Researcher ***August 2019 – May 2020***

- Enabled multiple edge-connected devices to collaborate on image recognition tasks using Google's ARCore and Firebase platforms
- Investigated the spatial and temporal correlations in the images of heterogeneous quality to improve recognition accuracy

Education

University of California, Berkeley Berkeley, CA

M.Eng. in Electrical Engineering & Computer Sciences ***August 2020 – May 2021***

Duke University Durham, NC

B.S. in Computer Science & Economics (Finance Concentration) ***August 2017 – May 2020***
Minor in Mathematics

Technical Skills

Programming Languages: Python, Java, C++, Go, C#, SQL, Typescript, HTML, CSS, Bash, Scheme, MIPS, LaTeX
Technologies: Git, GCP, Protobuf, gRPC, Kubernetes, Bazel, Jenkins, Prometheus, Terraform, ReTool, React, Flask, Next.js