Drew Ripberger

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Education

The Ohio State University — Columbus, OH
Bachelors of Science in Computer Science and Engineering; GPA: 4.00 — *Aug. 2020 – Expected May 2024*

Experience

IsoDiff Research Group — Jan. 2019 – Present
The Ohio State University — *Columbus, OH*

- Explored ways to group and characterize cycles from a serialization graph
- Tested accounting applications and collected their logs as test data so their violations of their isolation level could be found
- Assisted in manually verifying the results of the IsoDiff tool to ensure its accuracy

Software Engineering Intern — Mar. 2020 – Aug. 2020
Nirmata — *San Jose, CA (remote)*

- Worked to help develop observability solutions to supply data upstream to Nirmata's Kubernetes management dashboard
- Used Go, eBPF and the Kubernetes API to construct a DaemonSet that monitors a cluster's network
- Presented the project's progress to the CEO, CTO and VP of Engineering as well as wrote an announcement blog post for the project
- Spoke at KubeCon + CloudNativeCon North America 2020 about my work developing kube-netc and entering the Kubernetes space: "A High-Schooler's Guide to Kubernetes Network Observability"

Software Engineering Intern — Jul. 2018 – Sep. 2018
Fortissimo — *San Francisco, CA (remote)*

- Worked to help design and create Fortissimo's web app, and Android app
- Used React, and React-Native, working together with a team of interns to develop a responsive and appealing way to interact with Fortissimo's customers
- Collaborated with the other interns to design an interface for various applications that would best express the mission of Fortissimo

Projects

kube-netc | *Go, Docker, Prometheus, Kubernetes, eBPF, TravisCI* — Mar. 2020 – Present

- An open source network observability tool for tracking network statistics across Kubernetes clusters
- Utilized eBPF to pull raw networking data from Linux containers
- Created Go libraries to process and expose the networking data as Prometheus metrics
- Was the focus of my 6 month internship at Nirmata
- The source code may be found on the GitHub repository: https://github.com/nirmata/kube-netc

Dinghy | *Go, SQLite, R, LaTeX, gnuplot* — Nov. 2018 – May 2019

- Proposed a method to allow Raft clusters to better horizontally scale
- Wrote and ran tests in Go to assess Dinghy's effectiveness
- Analyzed and plotted the results of the tests in R and gnuplot to prove Dinghy's efficacy
- Won the University of Cincinnati Presidential Scholarship at the University of Cincinnati Science and Engineering Fair
- The source code and paper may be found on the GitHub repository: https://github.com/drewrip/dinghy

Technical Skills

Languages: Go, Java, LaTeX, JavaScript, SQL
Developer Tools: Git, Docker, TravisCI, Kubernetes
Frameworks & Systems: eBPF, Linux, Prometheus

Publications

[1] Y. Gan, X. Ren, D. Ripberger, S. Blanas, and Y. Wang. Isodiff: debugging anomalies caused by weak isolation. *Proc. VLDB Endow.*, 13(12):2773–2786, July 2020. ISSN: 2150-8097. DOI: 10.14778/3407790.3407860.