Chandrasekaran Akash

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EDUCATION

National University of Singapore
Singapore

Bachelor of Computing, Focus Area in Programming Languages and Parallel Computing   *Aug. 2021 – Present*

- NUS Greyhats : Member (2021 - Present), Special Projects Director (2021-2022)
  * Participated and organized Cybersecurity Capture-The-Flag (CTF) events.
- Google Developer Student Clubs, NUS : Software Engineer (External Team), Project Mercy Relief (2022-2023)
  * Launched React websites to manage users and sponsors for NGOs.
- Teaching Assistant (CS2107: Information Security) : AY22/23 Sem 1, AY 22/23 Sem 2, AY 23/24 Sem 1
- Teaching Assistant (CS2040S: Data Structures and Algorithms) : AY 22/23 Sem 2

EXPERIENCE

Software Engineering Intern
Aug. 2024 – Dec. 2024

Open Government Products   *Singapore*

- Currently spearheading features for data.gov.sg, a platform for disseminating open government data to the public.

Site Reliability Engineer Intern (Platform SRE)
May. 2024 – Aug. 2024

Shopee   *Singapore*

- Developed a service interfacing with Alertmanager and vmalert to create and route alerts using a simpler UI.
- Extended the Golang text/template engine by extracting free variables to generate forms dynamically given a templated MetricsQL expression.
- Reduced the error rate of configuring alerts (from 60% down to 5%), speeding up the process for SREs.

Infrastructure Engineer Intern
May. 2023 – Aug. 2023

ByteDance   *Singapore*

- Worked on a Kubernetes operator for rotating TLS certificates generated by Vault, used by the control plane.
- Improved performance of service discovery component, lowered response time for some endpoints as much as 66%.
- Contributed heavily towards improving the performance of Python and Golang-based services used at scale.

- As well as two Cybersecurity internships at Ensign Infosecurity (found CVE-2023-5760) and Starlabs.

PROJECTS

conq | *Rust, LLVM, MLIR, WebAssembly*   2024 – 2024
- Spearheaded the development of a language & compiler utilizing LLVM & MLIR to output WebAssembly.
- Developed a frontend with Monaco editor, with HTML Canvas bindings exposed to the language.

atlanta | *Rust, HTTP/3, io_uring*   2023 – Present
- Developing a proxy similar to nginx that uses HTTP/3 as the default transport, using the quiche library.
- Built a custom async runtime to create and manage linked and multishot io_uring CQEs instead of using tokio, supporting operations like sending and receiving packets and caching results into the filesystem using io_uring.

planlah | *Go, Flutter, Dart, Docker, Docker Compose, PostgreSQL*   2022 – 2022
- Developed the backend and infrastructure needed for the app using Golang and Docker.
- Integrated Firebase APIs (FCM) for notifications, and utilized Websockets for in-app messaging and updates.
- Achieved the highest level, Artemis, for the Orbital (CP2106) programme.

ACHIEVEMENTS

IndySCC (SuperComputing 24): *Team Participation (Ongoing)*	2024
DEFCON: *1st Place (Quals), 2nd Place (Finals, in Las Vegas, United States), with team Blue Water*	2023
International Cybersecurity Championship & Conference: *2nd Place (San Diego, United States), with team Asia*	2023
Cyber SEA Games: *1st Place (2023), 2nd Place (2022), 3rd Place (2021), with team Singapore*	2023, 2022, 2021

- And *several* more, in my LinkedIn

TECHNICAL SKILLS

Languages: Go, Rust, C#, Java, Python, Typescript, C/C++, SQL (PostgreSQL & SQLite), JavaScript, HTML/CSS
Technologies: React, Prometheus, Grafana, Alertmanager, Docker, Kubernetes, Google Cloud Platform, Amazon Web Services, Github Actions, Avalonia, WPF, React, Flask, eBPF

MISC

Work Authorization: Singapore Citizen; Eligible for the H-1B1-Singapore Visa. (separate quota from H-1B pool)