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EXPERIENCE

- **Skand**  Jan 2024 - June 2024
Melbourne, Australia
Research Intern
 - Developed a DSL for orchestrating durable execution workflows and the associated interpreter/execution engine in TypeScript.
 - Created the MVP drag and drop editor allowing non-technical customers to design their workflows based on pre-written activities using React.
 - Migrated the durable execution from Temporal.io to Dapr, eliminating non-determinism from JavaScript's async while achieving parallelism using 'yield' instead.
- **Huawei Tech Arena 2024** August 2024 - September 2024
Dublin, Ireland
2nd place (out of 200+ teams)
 - Utilized CP-SAT, linear programming, and genetic algorithms to solve server allocation and pricing problems over the span of 2 months
 - Collaborated with team to create a compelling business case presentation and presented to a panel of executives and senior developers.
 - Found XSS/CSRF vulnerabilities in the competition platform due to SVG handling.
 - This was an extremely competitive challenge as it was open for Bachelors up to PHD across the entirety of Europe with over 1000+ participants. Definitely the achievement I'm proudest of so far

EDUCATION

- **Cardiff University** September 2024 - June 2026
Cardiff, United Kingdom
Bsc Applied Software Engineering
 - Ongoing 2nd year
 - Expected 1st Class

PROJECTS

- **CVE-2022-26726: [MacOS/iOS TCC bypass]** Dec 2021 - May 2022
Tools: [Objective-C] 
 - Bypassed the permission control system (TCC) on MacOS and IOS such that applications can keylog, screen record, access camera, etc without permission.
 - Received a \$47,000 USD bounty from Apple
- **Cloudflare and Funcaptcha bypass** June 2024
Tools: [JavaScript, Golang, Chrome debugger] *Closed source
 - Figured out the heuristics used by Cloudflare for blocking bots and bypassed them using methods including JA3 spoofing
 - Reverse engineered the funcaptcha (Arkose labs) fingerprint and successfully generated them without a browser.
 - Sold the solutions to a client for \$10,000 USD.
- **revChatGPT** Nov 2022 - Aug 2023
PyPi 
 - 28k stars on GitHub and 800k downloads on PyPi
 - Managed over 100 open source contributors, reviewed 300+ pull requests and resolved 800+ issue reports
 - Facilitated the integration of ChatGPT with customer support and automation *before* the availability of an official API.

• **Apple WLOC: [Reverse engineering and mass data exfiltration]**

May 2024 - Aug 2024

Tools: [Golang, Ghidra]



- Reverse engineered Apple's CoreLocation Private Framework using Ghidra decompilations
- Exploited lack of access control and rate limiting to exfiltrate Apple's entire AP location database (over 2 billion records)
- First to successfully extract AP location data hosted by Alibaba for Apple within China.
- Wrote an ichnaea compatible proxy as an alternative to Mozilla Location Service after it shut down

• **Copilot Chat for Neovim**

Dec 2023 - Aug 2024

Tools: [Lua, Python, Rust]



- Reverse engineered Copilot Chat in VSCode and ported it to Neovim
- Created Lua bindings for tiktoken (Rust)
- Been maintaining the repository for a year and have since gained 1.7k stars on GitHub

• **Bursa: Automated stock trading**

September 2023, August 2024

Tools: [Python, Golang]

- Exploited lack of authentication in Maybank's stock dashboard to circumvent the \$2600 USD per month license fee and extract real time stock data
- Collaborated with client to develop a trading strategy based on insider trades of warrant shares with real time data
- Profitability of 35% over the span of 1 year, beating the market average of 16% during the same time period.

COMPETITIONS AND AWARDS

• **Bae Systems CTF Cardiff 2024**

Jan 2024

1st place

- Solved cybersecurity puzzles in areas such as buffer overflows, SQL injection, weak encryption, and server misconfigurations

• **CyberFirst Cardiff 2023**

October 2023

1st place



- OSINT and cybersecurity puzzles
- Found a real RCE + privilege escalation vulnerability in Cardiff's Computer Science department's web servers in the process.
- Although it was not the "correct" way of solving the challenges, it showcases my ability to think outside the box.

• **Yucatan CTF 2024**

June 2024

1st place

- Competed in data mining & cybersecurity challenges in a joint CTF between Cardiff and Yucatan university.

SKILLS

Listed in order of competence

- **Programming Languages:** Golang, Python, Zig, Lua, TypeScript, Java, Rust
- **Web Technologies:** Svelte, React
- **Database Systems:** SQLite, Postgres, MySQL
- **DevOps:** git, docker, wireguard, grafana

ADDITIONAL INFORMATION

Languages: English (Native), Chinese (Working proficiency)

Interests: Coding, Badminton, Table Tennis