

PHONG TRAN

Computer Science student at AU

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Education

Adelaide University

Master of Computer Science

Jan. 2026 – Nov. 2027

6.75/7 GPA

The University of Adelaide

Bachelor of Computer Science - Networking and Distributed Systems

Jan. 2023 – Nov. 2025

6.69/7 GPA

Technical Skills

Languages: C, C++, Java, JavaScript, Matlab, R, Python

Developer Tools: VS Code, Bash, Linux, Jupyter Notebook, Git, SVN, Docker

Technologies/Frameworks: GitHub, Qt, Vue.js, React, Next.js, EXPRESS, Node.js, MySQL, MongoDB

Experiences

Research Intern

AI for Space Group

July. 2026 - Now

AIML, Lot Fourteen, SA

- Conducted a research project investigating improved methods for associating short-arc orbital observations, supported by orbital-mechanics modelling and synthetic satellite data generation.
- Developed a Python-based satellite orbit data generator using two-body Keplerian dynamics to produce position and velocity data for space-object research.
- Investigated whether branch-and-bound optimisation could be adapted as a novel approach for short-arc observation association.

Summer Research Intern

CyberLab

Dec. 2025 - Feb. 2026

University of Adelaide

- Funded **1500 AUD** to investigate unexpected traffic behavior between EC2-based routers and hosts on AWS VPC IPv4 lab where traffics diverge from intended BGP selected paths.
- Implemented Linux L3 **Policy-Based Routing (PBR)** to enforce deterministic multi-hop traffic steering and enable flexible per-instance route control.
- Assessed feasibility of extending routing policies to dual-stack environments and analyzed how ICMP behavior, routing cache, and hop visibility affect validation of enforced paths.

Software Engineering Intern

CyberLab

Jul. 2025 - Nov. 2025

University of Adelaide

- Designed a Cyber Range platform to assess cascading failures on digital twins of existing critical infrastructures, **accelerating security engineers' evaluation process by 30%**.
- Implemented a cross-platform simulation system for cyber vulnerability scenarios, adopted by security engineers for training and **increasing the number of detected vulnerabilities by 25%**.
- Collaborated with UX/UI designers to build a web platform that enables researchers to simulate and analyze network vulnerabilities, **improving training engagement by 40%**.

Projects

Content-sharing Platform | *Next.js, React, Typescript, MongoDB*

 Jan. 2025 - Feb. 2025

- Developed a full-stack content sharing platform** enabling users to publish, browse, and engage with posts in a responsive web interface.
- Built a content management dashboard** with role-based access for creating, editing, and moderating posts.
- Implemented secure data storage and retrieval** using MongoDB, supporting scalability and efficient content management.

Green Action Volunteer Website | *JavaScript, Vue.js, Express, Node.js*

 Apr. 2024 - Jun. 2024

- Led a four-member team using Plan-driven development** to build an interactive volunteer management website with multi-level user access supporting event sharing, booking, cancellations, and email notifications.
- Developed authentication** for social login, **integrating OAuth 2.0** and authorization to grant access for multiple roles.

- **Implemented application security controls** to mitigate risks, including XSS and SQL injection, and enforced secure password storage using industry-standard hashing algorithms.
- **Built and administered the MySQL database**, implementing structure, constraints, and queries to support dynamic web content.

UK traffic accident Analysis | *Jupyter Notebook*

🕒 Jun. 2024 - Jul. 2024

- **Performed comprehensive data cleaning and preprocessing** across multiple datasets to enable detailed trend analysis of UK traffic accidents (2007–2016).
- **Developed interactive visualizations** using Seaborn and Folium to identify patterns and support data-driven insights.
- **Applied exploratory data analysis (EDA) techniques** to uncover correlations, anomalies, and actionable insights for traffic safety assessment.

Food Management System | *C++, Cmake, Qt, SQLite*

🕒 Sep. 2023 - Oct. 2023

- **Led a two-member team using Agile methodologies** to develop an interactive desktop application for food management, applying robust object-oriented programming principles.
- **Integrated SQLite for data persistence** and applied thorough **unit testing** to validate functionality and security.
- **Streamlined the build and deployment process** by incorporating CMake, enhancing workflow efficiency.
- **Recognized as a top project** in Object Oriented Programming, achieving a perfect score of 100%.

Extracurricular

Jane Street Electronic Trading Challenge

Mar 15th 2025

- Jane Street
- Hilton Adelaide, SA
- Led a team of 4 to **win 3rd place** out of 15 teams by implementing an automated trading bot to compete in a simulated market.
 - Generated over **AUD 600,000** in simulated profits by employing a penny-pinching strategy against algorithmic bots using regular equities.

References

Prof. Olaf Maennel CyberLab Adelaide University Adelaide, SA ☎ 83132038 ✉ olaf.maennel@adelaide.edu.au	Mr. Nhu Long Nguyen Microsoft Software Engineer Adelaide, SA ☎ +61 424657925 ✉ nhulong.nguyen@adelaide.edu.au	Prof. Tat-Jun Chin AI for Space Group Australian Institute for Machine Learning (AIML) Adelaide, SA ☎ +61 298551824 ✉ tat-jun.chin@adelaide.edu.au
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