Le Nguyen Phong

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EDUCATION

Yale-NUS College Aug 2020 – May 2024 (Expected)
Bachelor of Science with Honours in Computer Science Singapore

- Current CAP / GPA: 4.65 out of 5.
- Recipient of the Yale-NUS Donor Study Award and MOE Tuition Grant.
- Relevant Coursework: Calculus, Linear Algebra, Proof, Quantitative Reasoning, Introduction to Computer Science, C, *(Current):* Introductory Data Structures and Algorithms, Programming for Data Science.

SKILLS

Programming Languages: *(Proficient):* Python, C/C++, *(Familiar):* Javascript, OCaml, R.

Technologies: Git, React, AWS (Route 53, S3, CloudFront), MySQL, Pandas, Matplotlib, Linux (Ubuntu), Bash, CMake, GTK, Arduino, Raspberry Pi.

Languages: *(Fluent):* English, French, Vietnamese, *(Beginner):* German.

EXPERIENCE

Olsen Lab – Lab Monitoring Software May 2021 – Present
Student Researcher under Professor Ben Olsen Singapore

- Designed and implemented a Raspberry Pi based monitoring system with sensors and an automated camera system to observe conditions in Olsen Lab for studying quantum phases of ultracold atomic gases; collected over 5 million data points and 100 thousand pictures to date.
- Led the development of a new Python desktop application with a GUI implemented with GTK and Matplotlib to retrieve and visualise collected data from the lab MySQL server, resulting in a 70% speed improvement when plotting large datasets over previous versions.
- Eliminated duplicate and missing data by restructuring the lab MySQL server and creating a backup system.
- *Technologies:* Python, Pandas, Matplotlib, GTK, MySQL, SQLite, Raspberry Pi, Linux, Bash.

go-cart.io – Topology Aware Cartogram Generator Software December 2020 – Present
Student Researcher under Professor Michael Gastner Singapore

- Implemented function in C++ to project map coordinates based on displacement of map grid points.
- Enhanced software by implementing additional computational geometry algorithms in C++ to eliminate topology errors. All tested maps now yield topologically correct cartograms, including those with unconventional topology.
- Improved code readability by reviewing code and suggesting stylistic changes.
- *Technologies:* C/C++, CGAL, CMake, Linux, Bash.

PROJECTS

Personal Website December 2021
https://lenguyenphong.com – https://github.com/phongulus/personal-website Singapore

- Built a responsive personal website using React.
- Deployed website with AWS S3 and CloudFront.

Data Transmission with Visible Light 2019
https://github.com/phongulus/light-messenger Hanoi, Vietnam

- Designed and built a pair of Arduino-based transceivers from scratch capable of transmitting text messages by blinking a white LED and of receiving data via a solar panel.
- Devised a communication protocol for data transfer, reached transmission speeds of up to 25 bytes per second.

EXTRACURRICULARS

Yale-NUS Undergraduate Journal April 2021 – Present
Co-Editor-in-Chief Singapore

- Leading a team of 13 editors and 8 authors from both Yale-NUS and NUS, coordinating publication of Volume 5.
- Led two workshops aimed at teaching editors academic citation styles and citation software.