Le Nguyen Phong

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EDUCATION

Yale-NUS College   **Singapore**
Bachelor of Science with Honours (current CAP: 4.65)   **Aug 2020 – May 2024 (Expected)**
- Recipient of the Yale-NUS Donor Study Award and MOE Tuition Grant.
- Coursework: YCC1122 Quantitative Reasoning, YSC1212 Introduction to Computer Science, YSC2209 Proof, YSC2232 Linear Algebra, YSC2227 C: A Language For Science And Engineering

Lycée Français Alexandre Yersin   **Hanoi, Vietnam**
French Baccalaureate, Science Stream, Highest Honours (Score 20/20)   **Sept 2017 - July 2020**
- Awarded the AEFE Excellence-Major Scholarship, a French government scholarship covering tuition and living expenses for 5 years of higher studies in France. Refused scholarship to go to Yale-NUS College.

EXPERIENCE

Olsen Lab – Lab Monitoring Software   **Singapore**
Student Researcher   **May 2021 – Present**
- Set up a monitoring system to observe conditions in Olsen Lab of Yale-NUS College.
- Wrote and deployed a single, modular code base on all Raspberry Pi's in the lab, each with different sensors.
- Restructured the lab MySQL database to prevent duplicate or missing data points.
- Implemented a backup system to prevent data loss in case of a lab server outage.
- Wrote a Python app with a GUI that allows lab researchers to retrieve data from the MySQL server and visualise them via graphs, with features such as plotting multiple measurement units and data subsampling.
- Wrote another Python app that allows researchers to quickly see which Raspberry Pi's are active and if critical values are beyond defined safe thresholds.

go-cart.io – Topology Aware Cartogram Software   **Singapore**
Student Researcher   **December 2020 - Present**
- Working with Dr. Michael Gastner on a cartogram generator written in C++.
- Tested various geometry libraries such as CGAL and GEOS.
- Implemented algorithm for strategically densifying map borders to avoid topology errors.
- Implemented algorithm for projecting map coordinates from deformed grid cells by subdividing the map into triangles and applying affine transformations.
- Tested and debugged code on different maps, and added handling for floating point errors and edge cases.

PROJECTS

Personal Website   **Singapore**
https://lenguyenphong.com – https://github.com/phongulus/personal-website   **December 2021**
- Built a responsive personal website using React.
- Deployed website with AWS S3.

Data Transmission with Visible Light   **Hanoi, Vietnam**
High School Project – https://github.com/phongulus/light-messenger   **2019**
- Built a pair of Arduino-based transceivers capable of transmitting text messages by blinking a white LED.
- Devised a communication protocol for data transfer, which involves sending a start code, the length of the message, and finally the text message itself.
- Debugged synchronization issues between transmitter and receiver.
- Designed the circuits of the transceivers with EAGLE, and soldered the circuits.

ADDITIONAL INFORMATION

Extracurriculars: Co-Editor-in-Chief of the Yale-NUS Undergraduate Journal, Member of YNC_Hacks.

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

Technical Skills: Python, C/C++, Git, Arduino (proficient). React, OCaml, R (familiar).