

EDUCATION

Master of Computing, Computer Science, National University of Singapore, GPA: 4.60/5.00 Jul 2020 — Dec 2021
Bachelor of Technology, Mechanical Engineering, National Institute of Technology, GPA: 8.27/10.00 Jul 2012 — May 2016

EXPERIENCE

Research Assistant Jan 2021 — Present
National University of Singapore Singapore, SG

- Working on **program hardening** using novel hardware-software co-design memory safety techniques such as **encrypted pointers** with **PIN tool/compiler instrumentations**.
- Performed **SPEC2017 bench-marking** and **Top-down performance analysis** for SoA compilers such as **LowFat & EffectiveSan**. Found 16+ bugs in SPEC suite.
- Devised and distributed middle-ware [Phantom] in **Python + AWS** to automate firesim-based **FPGA hardware simulations**. Reduced setup-to-simulation time by 40% and conserved 6TB+ storage.

Full-stack Developer Nov 2020 — Jan 2021
Opsis - Emotion Recognition AI Singapore, SG

- Tailored a web application with **Python Flask-based** back-end for emotion recognition service and a SAPUI5-based front-end for extracting emotion scores from image/video under a month.
- Built a **docker image** as a server (NodeJs) reducing 2 middle-ware stages.

Software Developer Sep 2016 — Jul 2020
Oracle Bangalore, IN

- Produced Front-end screens (40+) on OJET (**KnockoutJs**) for Oracle Banking Liquidity Management (OBLM).
- Completed **Spring Boot 2-based micro services** for accounts user screens; deployed Netflix Eureka discovery.
- Identified redundant operations; wrote **batch utilities** for git and svn repository management. Pipe-lining **shortened release time by 1 week**.
- Established an end-to-end Automation Framework (Hybrid) for OLM using **Selenium WebDriver + JAVA** under 6 months. Utilizing **regex parsers**, solved analysis of OBLM (X-Path) which led to development of on-demand waits.
- Planned and conducted 3-day workshops for experienced developers on framework; resulted in 80% testing coverage of existing code-base. Reached support targets in half-time supervising a team of 3.

PROJECTS

Vis-A-Vis | Tableau, Python, D3.js, Power BI, Excel, Data Analytics Jan 2021 — Present

- Curated a growing portfolio of 7+ visualizations with insights and anatomy.
- Hosted 5 categories with subjects ranging from 'Satellites launched by different countries', 'Crimes in San Francisco' to 'Analysis of a Relationship'.

Jellyfish | Python, Mininet, Software Defined Networking, Graph Theory Jul 2021 — Dec 2022

- Performed experimental reproduction of 4 results from Jellyfish networking topology.
- Configured ECMP routing using floodlight controller to simulate network traffic for 686 servers.

Aahar | Python, Web Scraping, Tableau, Data Science Jan 2021 — May 2021

- Designed novel dish-similarity metrics & a planetary system-like visualization for a 3-faceted study on Indian cuisine using open source datasets.
- Extracted data from *MyFitnessPal*; standardized and processed to derive correlations between obesity trends across 4 regions.

SpearCar | Python, NLP, EDA, Streamlit, Regression Jul 2021 — Dec 2022

- Modeled and trained a recommendation & analysis engine over the pricing of resale cars on sgCarMart over a rolling two-month data window.
- Hosted a web application suggesting good car deals based on listing trends across 160 manufacturers & 8 vehicle types.

Breeze-Blog | Bubble, PostgreSQL, LSTM, System Design Jan 2021 — Apr 2021

- Engineered a social media platform for writing/sharing haikus with two-mode sentiment & personality analysis.
- Employed a LSTM AI text generator for initial user engagement and used Linguistic Inquiry and Word Count for personality scores. Adopted by 50+ users.

SKILLS

Languages Python, JAVA, C++, Bash, Shell, C, SQL
Frameworks/Libraries Scikit-learn, PyTorch, Knockout, JavaScript, Mininet, TensorFlow
Technology Git, AWS, Postman, Docker, Weblogic Server, \LaTeX , MongoDB, Selenium