DING FENG

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EDUCATION

National University of Singapore — August 2023 - Present
B.Comp. in Computer Science
with minor in Mathematics

· Recipient of Science & Technology Undergraduate Scholarship
· GPA: 4.55/5.0 *(Highest Distinction)*

PERSONAL STATEMENT

I am a computer science student with broad research experience in programming languages and proven track record in full-stack development. My focus is mainly on logical foundation of software, machine assisted approaches to build reliable software and next-generation methods for understanding computer programs.

EXPERIENCE

PLSE Lab, National University of Singapore — Jan 2026 - Present
Research Assistant — *Singapore*

· Work on invariant synthesis and checking with *Prof. Chin Wei Ngan*.

School of Computing, National University of Singapore — Aug 2024 - Present
Teaching Assistant — *Singapore*

· Teach following courses, with multiple indicators in feedback surpass department average.
  • *CS1231S - Discrete Structures* in 24/25 SEM 1
  • *CS2040S - Data Structures and Algorithms* in 24/25 SEM 2, 25/26 SEM 2.,
· Conduct weekly tutorial sessions, mark students homework scripts and give feedback.

PLI Lab, National University of Singapore — Jan 2025 - Dec 2025
Research Assistant — *Singapore*

· Work on a funded project under the advice of *Prof. Michael D. Adams*. Get experience with Haskell and practical experience on general functional programming. Explore a programming paradigm based on the interaction between expression and continuation. Design and implement *Mini-Mu*.
· The only undergraduate's work presented on SG PL summit'25. Also awarded *Bronze Medal* at ICFP'25 Student Research Competition.

Source Academy, National University of Singapore — Aug 2024 - Nov 2025
Researcher & Software Engineer — *Singapore*

· Add the support for *Pie* in Source Academy (a widely used teaching system at School of Computing), under the supervision of *Prof. Martin Henz.* Get familiar with dependently typed theorem provers.
· Implement an interpreter in *Typescript*, along with *a web toolkit* to write/debug/visualize programs.
· The project has been awarded the *Best Project Prize* in *STEP'26*.

Orbital - Software Engineering Program — May 2024 - Aug 2024
Software Engineer — *Singapore*

· Build a music player, with various distinct functions including switching between listening modes, AI music recommendation, and automatic soundtrack separation based on open-source tools.
· Co-manage the progress of the project by using Git. Co-design, develop and test the *frontend* and *backend* of the software. More than 20,000 LOC written upon Flutter and Django framework.

New Oriental Education & Technology Group Jul 2024 - Aug 2024

Mar 2023 - Jun 2023

Teaching Assistant *Tianjin, China*

· Full-time internship as teaching assistant for Mathematics and Physics from various curricula. In charge of a class with capacity of about 10 students. Manage their attendance and make sure they complete their homework on time.

Research Workshop Jun 2022 - Sep 2022

Researcher *Online*

· Join a project-based workshop, exploring machine learning methods to quantify price of cryptocurrencies.
· Learn methods to conduct data processing and analysis, construct statistical models, and evaluate performance. Enhance Python skill and get familiar with libraries including *numpy*, *sklearn* and *pytorch*.

PROJECTS

- A Domain specific language for teaching algorithms. Incorporate gradual types, full type inference and invariant checking to help student experiment over algorithms.
- An automated tool for downloading and uploading from/to multiple targets in Go.
- A formally verified interpreter and compiler for arithmetic expressions, using theorem prover *Coq*.
- A Rust sub-language's type checker, compiler and a virtual machine. Demonstrating the complex borrowing and moving rules in Rust programming language.
- Personal website based on ReactJS.

TECHNICAL STRENGTHS

Programming Languages *Java, Python, Go, Dart, TypeScript, Haskell, OCaml, Lean, Rocq.*
Technology Stack *gRPC, Flutter, Django, ReactJS, Docker*