DING FENG

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EDUCATION

National University of Singapore August 2023 - Present
B.Comp. in Computer Science
Minor in Mathematics and Economics

· Recipient of Science & Technology Undergraduate Scholarship

Interesting courses taken:

Prog. Lang. Implementation	Logic for Proofs and Programs	Theory of Computation
Linear Algebra II	Multivariable Calculus	Logic in Computer Science

Overall GPA: 4.53/5.0 *(Highest Distinction)*

PERSONAL INTERESTS

I like to build new things with the help of computer and mathematics. I like to cooperate with other people. Currently, my focus is mainly on logical foundation of software, automatic approaches to build reliable software and their mathematical implications.

EXPERIENCE

National University of Singapore Jan 2025 - Present
Research Assistant *Singapore*

· Work on a year-long project under the official UROP (undergraduate research opportunity) program, with the supervision of *Prof. Michael D. Adams*.
· Explore a new paradigm of programming which is based on duality between expressions and continuations. Design and implement a small sample language *(Mini-Mu)* then try to figure out possible ways of utilize it, and design the mental model for this new Paradigm.
· Get more insight into the structure of program and control flow.

National University of Singapore Aug 2024 - Present
Teaching Assistant *Singapore*

· Teach *CS1231S - Discrete Structures* in 24/25 SEM 1, with multiple teaching indicators in feedback surpass department average.
· Teach *CS2040S - Data Structures and Algorithms* in 24/25 SEM 2.
· Conduct weekly tutorial sessions (2-hour lecture with $\sim$ 15 students), mark students homework scripts and give timely feedback. Also, answer students' questions after class.

National University of Singapore Aug 2024 - Apr 2025
Student Developer *Singapore*

· Add the support for Pie (*https://thelittletyper.com*) on Source Academy (a widely used teaching system for teaching in NUS *https://sourceacademy.org/playground*), under the supervision of *Prof. Martin Henz*.
· Re-implemented the original interpreter and parser written in *Racket* using *Typescript*, in order that the *Pie* program can be interpreted using browser.
· Get familiar with dependent types system and Theorem Provers, such as *Pie*, *Coq* and *Lean*. Get the preliminary ability of using them to reason and/or augment the semantics of programs.
· Source code: *https://github.com/source-academy/pie-slang*. The project has been awarded the Best Project Prize in STEP26.

Orbital - Software Engineering Program @ NUS May 2024 - Aug 2024
Software Engineer *Singapore*

- Build a fully operational music player, with various distinct functions including mode switching and AI music recommendation.
- Co-manage the progress of the project.
- Co-develop the front-end of the project, with more than 16,000 lines of code written based on *Flutter* framework. Code: *https://github.com/dingf3ng/spoplusplusfy*.
- Co-develop the back-end system of the project, which is based on *Django*.
  Code: *https://github.com/kaoxi998533/spo-fy_backend*

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.
- In charge of a class with capacity of about 10 students. Manage their attendance and make sure they complete their homework on time.
- Answer students' various questions when they need. The questions are majorly from *A-level*, *AP*, and Chinese *Gaokao* curriculum.

Research Workshop Jun 2022 - Sep 2022
Researcher *Online*

- Join a project-based research workshop, exploring machine learning methods to analyze and predict price of Cryptocurrency.
- Enhance Python programming skills and get familiar with a set of the external libraries.
- Learn how to conduct data processing and analysis, construct statistical models, and measures to evaluate model's performance.
- Write and publish paper: *The Research on the Prediction of Cryptocurrency Based on Linear Regression and LSTM*. Code: *https://github.com/dingf3ng/final-project*

TOY PROJECTS

- A formalized interpreter and compiler for arithmetic expressions, using *Coq*.
- A Rust sub-language interpreter. Demonstrating the borrowing and moving in Rust programming language. *https://github.com/24-25S2-CS4215Project/Rusted*.
- My personal website based on ReactJS framework. *https://dingf3ng.github.io*.

TECHNICAL STRENGTHS

Programming Languages	*Java, Python, C++, Dart, JavaScript, Lean, Coq, Haskell, Racket.*
Frameworks	*Flutter, Django, ReactJS, Spring Boot, MyBatis*
Databases	*MySQL*
Tools	*LaTeX, Microsoft Office*