

# Kyriel Abad

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## EDUCATION

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### National University of Singapore

*Bachelor of Computing in Computer Science*

Specialisations in Parallel Computing, Programming Languages

Singapore, Singapore

*Aug. 2022 – Present*

## EXPERIENCE

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### Student Software Developer

*National University of Singapore*

Jan. 2023 – Present

*Singapore, Singapore*

- Developed software for the *Source Academy* web education platform

*Student Software Developer I*

*Jan. 2023 - May 2024*

- Played a key role in implementing scm-slang, a transpiler for the Scheme Programming language into Javascript
- Conducted research to better understand the source language Scheme
- Collaborated with a partner to integrate the transpiler into the platform

*Student Software Developer II*

*Jan. 2024 - Present*

- Spearheaded the enhancement of scm-slang as part of self-initiated research venture with lead professor
- Expanded on the integration of the transpiler into the system with better compatibility
- Advanced the capabilities of the transpiler to allow for language features beyond to-language JavaScript
- Assessed and troubleshooted issues and bugs

### Undergraduate Teaching Assistant

*National University of Singapore*

Aug. 2023 – Dec. 2023

*Singapore, Singapore*

- Taught 2 courses, CS1101S Programming Methodology and CS2100 Computer Organisation
- Delivered weekly tutorial lessons to a class of 6 (CS1101S) / 2 classes (49 students total) (CS2100)
- Devised personal teaching materials for classes
- Assessed student assignments and provided useful feedback
- CS1101S: Received 4.8/5 teacher rating from students (Department average: 4.3/5)
- CS2100: Received 4.4/5 teacher rating from students (Department average: 4.3/5)

## PROJECTS

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**scm-slang** | *TypeScript, React, Scheme, Git*

Jan. 2023 – Present

- Developed a transpiler from Scheme to JavaScript
- Devised methods to represent Scheme language features in JavaScript
- Enhanced *Source Academy* online platform to enable multi-language support

**Cody** | *Rust, Assembly, LLVM, Lisp*

Jan. 2024

- Developed a compiler for *Cody*, a language based on Lisp in 24 hours for hackathon *Hack&Roll*
- Formulated a language specification using *Backus-Naur* form
- Implemented a compiler using Rust and LLVM package *Inkwell*

**ZeroG** | *C#, Unity*

Feb. 2022

- Developed a zero gravity first person shooter game in 3 days for online Harvard University course *CS50x*

**Telegram Attendance Tracking Bot** | *Python, Telegram API*

Mar. 2021 – Jan. 2022

- Spearheaded discussion with superiors to develop solutions to alleviate administrative workload
- Built NSFattendanceBot to automate attendance collation as a clerk using *pyTelegramBotAPI*

## TECHNICAL SKILLS

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**Spoken Languages:** English, Japanese

**Languages:** Java, Python, C, Rust, JavaScript, TypeScript, Coq, Scheme, Lisp

**Frameworks:** React, Node.js, JUnit, Unity, LLVM

**Developer Tools:** Git, VS Code, IntelliJ, Vim, Emacs

**Libraries:** pyTelegramBotAPI, estree