Jonathan Tran

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Education

Cornell University   Ithaca, NY
Master of Science in Computer Science   Expected May 2023
Cornell University, College of Arts & Sciences   Ithaca, NY
Bachelor of Arts in Computer Science and Statistical Science   May 2021
GPA: 4.071
Related Courses: Design and Analysis of Algorithms, Operating Systems, Data Structures and Functional Programming, Computer Organization and Systems Programming, Programming Languages, Network Programming Languages, Systems Programming, Artificial Intelligence, Language and Information, Software Testing

Skills and Languages

Proficient Languages: Python, OCaml, R
Familiar Languages: Rust, C++, Racket, Java, C, Coq, Matlab, HTML/CSS/JavaScript, OpenFlow, P4
Tools and Libraries: Git, Github, VS Code, Eclipse, LaTeX, LLVM, Scikit Learn, Numpy

Work Experience

Lockheed Martin NYSG Internship   Owego, NY
Engineering Intern   June 2020-August 2020

- Develop innovative smart greenhouse, with featuring analytics, machine learning, and custom user controls, along with low level systems control for hardware devices
- Gain extensive experience with Django framework to develop web apps like Weather app and Plant Info App
- Extensively test, validate and verify system
- Push weekly features utilizing an Agile setting, using the Scrum framework

Tompkins Consolidated Area Transit (TCAT)   Ithaca, NY
Software Engineering Intern   January 2020-May 2021

- Collaborate with software lead to understand and work with code base on tracking real-time bus system status
- Design bus detour tracking software to report when bus leaves route, and whether bus returns to route
- Utilize system on large-scale historical data sets

Cornell Department of Computer Science   Ithaca, NY
Undergraduate Research Assistant   January 2021- August 2021

- Translate C code to custom Racket domain specific language.
- Develop vectorization pass for C in LLVM and Rust, and port benchmarks for pass.

Project Experience

Language Compiler Project   July 2020-Present
Independent Project in Python   Portland, OR

- Design syntax and semantics for a strongly typed language
- Construct custom lexer, parser, semantic analyzer / type checker, code emitter targeting RISC-V assembly
- Develop Intermediate Representation that abstracts details of RISC-V
- Implement optimizations like conditional constant propagation, tail call optimization, copy propagation, condition subexpression elimination, and loop invariant code motion

Nano Inspired Text Editor   May 2020
Independent Project in Python   Portland, OR

- Formulate architecture for a text editor with 30+ operations, including copy/paste, save, undo redo and more
- Devise graphical interface using Curses package
- Integrate into custom flashcard system as a method for users to input or modify cards