

Kelton OBrien

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Education

- University Of Minnesota, Twin Cities** *GPA:3.94 TGPA:3.94* Fall 2019-Spring 2023 *Computer Science B.S*
- Attended the U of M full time throughout my senior year of high school through the PSEO program, largely taking computer science courses.
 - Seeking a Computer Science B.S, a Linguistics B.A, a Philosophy minor, and a Mathematics minor.
 - Notable Coursework: Algorithms and Data Structures, Formal Languages and Automata Theory, Programming Languages, Functional Algorithm Design and Calculation, and Machine Architecture and Organization.
- Minneapolis Community and Technical College** *GPA:4.00 TGPA:4.00* Fall 2018-Spring 2019
- Attended MCTC full time as a non-degree seeking student during junior year of high school through the PSEO program.

Experience

- University of Minnesota Twin Cities Computer Science and Engineering Department**
Minneapolis, Minnesota January 2021-Present *Teaching Assistant*
- I currently TA for CSCI 2041, a class that teaches functional programming in OCaml, and formal reasoning about functional programs.
 - I Previously TA'd for CSCI 2021, a class that teaches low level machine architecture, including programming in C and x86 assembly.
- Minnesota Extensible Language Tools (MELT) research group**
Minneapolis, Minneapolis November 2020-Present *Student Researcher*
- I work researching parsing theory and adding counterexamples for ambiguous or non-LALR grammars to the copper parser generator.
- University of Minnesota Twin Cities School of Mathematics**
Minneapolis, Minnesota January 2021-April 2022 *Student Developer*
- I helped develop doenet, distributed open-source education software.
 - My work mostly focused on the programming language related aspects of the project, specifically the text editor and the parsing & evaluation of the project's bespoke mark up language, doenetML.

Skills

Programming Languages: Haskell, OCaml, Python, C, Java, HTML, CSS, Typescript, Javascript, Rust, Coq
Tools/Frameworks: Linux and unix-like OSes, Flask, Git, (Neo)vim, nix, \LaTeX , GDB, Excel, NGINX, React, Recoil
Human Languages: English (Native), Swedish (A2), German (A2)

Projects

Hasus

Hasus is a turing complete, statically typed functional programming language written in haskell. It is very similar to haskell, but with strict evaluation.

Extracurriculars

- ACM UMN (President)** 2022-Present
- I do almost all of the organization & management of the club, planning & running events, including MinneHack, the largest hackathon in minnesota. In addition to my duties as president, I host a paper reading group, classes to teach new students about unix, seminars on programming language implementation, and I write problems for the ACM UMN CTF (capture the flag) which is a cybersecurity event that ACM UMN hosts once a semester.
- ACM UMN (Vice-President)** 2020-2022
- ACM UMN (Treasurer)** 2019-2020
- Radio K (DJ)** 2022-Present
- Programming Languages Seminar** 2019-Present
- I am a member of the Programming Languages Seminar, a reading group consisting mostly of graduate students researching programming languages. We've covered several courses worth of material with the books and papers we've discussed.

Awards & Achievements

- Deans List, University of Minnesota** 2019, 2020, 2021, 2022
- Deans List, Minneapolis Community and Technical College** 2018, 2019
- 1st Place, U of M Software Design Competition** 2019
- I created a flask-based web application to answer a prompt relating to organizing a heist.