Noble Mushtak

noblemushtak.public@gmail.com
noblemushtak.com | linkedin.com/in/noble-mushtak | github.com/Noble-Mushtak

Education

Northeastern University Apr 2023
Khoury College of Computer Sciences
Bachelor of Science in Computer Science and Maths *Boston, MA*
GPA: 4.0/4.0

Technical Skills

Languages: C, C++, Java, Python, Coq, OCaml, Latex, Rust *Familiar*: Bash, Haskell, HTML, CSS, JavaScript, Scala
Developer Tools: Emacs, Git, GDB, Valgrind, IntelliJ IDEA, Google Apps Script, GitHub Pages, Android Studio
Libraries and Frameworks: Beamer, Django, Firebase, Jekyll, SageMath, Qt5

Work Experience

Software Engineer Jul 2023 – Present
Snowflake *San Mateo, CA*
- Working on performance enhancements to Snowflake's SQL engine using C++

Software Engineer Intern May 2022 – Aug 2022
Snowflake *San Mateo, CA*
- Implemented the semantics of a conversion from a decimal fixed-point number type to an IEEE 754 binary floating-point number type in a SQL programming language
- Read an academic paper about the Eisel-Lemire algorithm for parsing floating-point numbers and implemented the algorithm to improve the efficiency of the conversion
- Co-authored a technical note with Prof. Daniel Lemire about proving the Eisel-Lemire algorithm correct for all 64-bit significands using the theory of continued fractions

Research Assistant May 2021 – Jun 2023
Northeastern University *Boston, MA*
- Coauthored a published academic paper with Prof. Amal Ahmed and two graduate students presenting a novel method for verifying sound language interoperability
- Developed a large Coq project which verified a type soundness proof for a multilanguage using logical relations
- Won third-place in the undergraduate division of POPL 2022's Student Research Competition
- Worked on a Coq project to formally verify type soundness for RichWasm, a version of WebAssembly with an enriched type system for supporting safe shared memory interoperability

Software Engineer Intern Jun 2017 – Aug 2019
Spin Analytical *Berwick, ME*
- Coded multiple Qt5 GUI programs for Raspberry Pi using C++ and Boot2Qt
- Developed multithreaded Qt5 application for a custom drug synthesis instrument

Publications

Noble Mushtak and Daniel Lemire. "Fast number parsing without fallback." In: *Software: Practice and Experience*. DOI: https://doi.org/10.1002/spe.3198.

Daniel Patterson, Noble Mushtak, Andrew Wagner, and Amal Ahmed. "Semantic soundness for language interoperability." In: *Proceedings of the 43rd ACM SIGPLAN International Conference on Programming Language Design and Implementation (PLDI 2022)*. DOI: https://doi.org/10.1145/3519939.3523703

Activities

Competitive Programming Dec 2014 – Present
- Organized a team of three people to represent Northeastern University in ACM-ICPC, the largest worldwide university-level programming competition
- Placed 86th in the world at ACM-ICPC World Finals 2021
- Reached Meta Hacker Cup 2022 Round 3 and placed 145th out of 27604 overall contestants

Northeastern Putnam Team Sep 2019 – Apr 2023
- Attended weekly meetings where students solved past problems from the Putnam Competition, the principal mathematics competition for undergraduate students in the United States and Canada
- Placed 150th out of 2975 students in Putnam 2021, 164th out of 3415 students in Putnam 2022