Noble Mushtak

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EDUCATION

Northeastern University   09/2019 – Present
Khoury College of Computer Sciences   *Expected 05/2023*
Pursuing Bachelor of Science in Computer Science and Maths   *Boston, MA*
GPA: 4.0/4.0

TECHNICAL SKILLS

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

WORK EXPERIENCE

Incoming Software Engineer Intern   09/2022 – 12/2022
Radix Labs   *Cambridge, CA*
Software Engineer Intern   05/2022 – 08/2022
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
- Currently working with Professor Lemire on a technical note about proving the Eisel-Lemire algorithm correct for all 64-bit significands using the theory of continued fractions

Research Assistant   05/2021 – Present
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
- Currently working on a Coq project to formally verify type soundness for CapableWasm, a version of WebAssembly with an enriched type system for supporting safe shared memory interoperability

Software Engineer Intern   06/2017 – 08/2017, 06/2018 – 08/2018, 06/2019 – 08/2019
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
- Wrote 20-page user manual in LaTeX

PUBLICATIONS

Semantic Soundness of Language Interoperability
- Daniel Patterson, Noble Mushtak, Andrew Wagner, and Amal Ahmed. 43rd ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2022).

ACTIVITIES

Competitive Programming   12/2014 – Present
- Developed proficiency in mathematical and algorithmic problem-solving through programming contests
- Organized a team of three people to represent Northeastern University in ACM-ICPC, the largest worldwide university-level programming competition
- Placed 20th at ACM-ICPC North America Championship 2021 (team contest)
- Reached Google Code Jam 2021 Round 3 and placed 562nd in the world, out of 37398 overall contestants

Northeastern Putnam Team   09/2019 – Present
- 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 192nd out of 4229 students in Putnam 2019
- Placed 150th out of 2975 students in Putnam 2021