Grant Jurgensen

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Professional Summary

Experienced software engineer with a passion for writing safe and correct software. Background in research and formal methods. Proven track record of meaningful contributions to projects ranging from open-source to government-funded research initiatives. Holds a Top Secret security clearance.

Work Experience

Computer Scientist
Kestrel Institute *May 2022 - Present*
Kestrel Technology *December 2022 - Present*

- Contributed frequently to the open-source ACL2 project, an industrial-strength theorem prover built on Common Lisp.
- Developed and extended high-assurance program transformations for C code and ACL2 specifications that emit formal proofs of equivalence.
- Collaborated on the development, testing, and formal verification of a basic network stack, and its porting to the seL4 microkernel.
- Identified and fixed memory leaks in a large Java codebase, an Air Force mission planning prototype called "SCHARP". Previously, application would reach memory ceiling after 5 minutes of intense workload. After refactoring, it could run indefinitely.
- Created an automated GitLab CI/CD pipeline for the SCHARP project, enabling quick detection of errors and performance regression.

Graduate Research Assistant *June 2019 - May 2022*
Undergraduate Research Assistant *June 2018 - May 2019*
Undergraduate Teaching Fellow *September 2017 - May 2018*
University of Kansas

- Led the development of a prototype attestation manager, written in a dialect of Standard ML. The attestation manager interpreted a domain-specific protocol language and composed system measurements with cryptographic primitives accordingly. Designed for cross-platform support, targeting Linux, macOS, and seL4.
- Designed and modeled a system architecture in support of secure remote attestation. Formalized within the Coq theorem prover and verified several safety and separation properties.

Education

Master of Science in Computer Science *June 2019 - May 2022*
University of Kansas GPA: 3.98

- Awards: Outstanding Master's Researcher in the School of Engineering
- Thesis: A Verified Architecture for Trustworthy Remote Attestation

Bachelor of Science in Computer Science *August 2015 - May 2019*
University of Kansas GPA: 3.94

- Honors: Distinction, Honors Program, Dean's Honor Roll
- Minor in Mathematics

Languages and Technologies

Programming Languages: Common Lisp, C, Standard ML, Rust, Java, Haskell
Formal Methods: ACL2, Coq, Z3
Other: Git, SVN, Linux, LaTeX