



Kingston Banks

Software Engineer Intern, Secure Cross Domain Systems

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SUMMARY

Computer science student with two years of supervised research, secure systems laboratory work, and software projects focused on dependable engineering. Developed C, C++, Rust, and Python components for simulated secure data transfer, then connected requirements, UML and SysML models, implementation tasks, automated tests, and evidence. Used Git, Jira, containers, virtualization, **CI/CD**, and introductory DevSecOps practices across multidisciplinary student teams. Built embedded exercises, explored microservices and orchestration, and integrated prototype software with laboratory hardware interfaces. Active **U.S. government SECRET clearance** and **U.S. citizenship** support secure aerospace and defense work. Enrollment continues through Summer 2027. Ready to contribute careful analysis, clear technical communication, and practical software integration that helps **secure cross domain systems** reach reliable test environments.

EDUCATION

Bachelor's Degree in Computer Science

Iowa State University 🎓 GPA: 4.0 📅 2027 📍 Ames, IA

Coursework: Software Engineering, Embedded Systems, Cybersecurity, Requirements Engineering

TECHNICAL SKILLS

- **Programming Languages:** C, C++, Rust, Python
- **Version Management:** Git, Subversion, Jira
- **Systems Modeling:** UML, SysML, data flow diagrams
- **Embedded Development:** Embedded C, embedded C++, Rust
- **Testing Tools:** Python automated testing, unit testing, failure testing
- **Virtualization:** Virtual machines, isolated environments, virtual test systems
- **Containers:** Containers, container images, isolated services
- **Software Architecture:** Microservices, service boundaries, software integration
- **Orchestration:** Container orchestration, deployment workflows, service coordination
- **DevSecOps Delivery:** DevSecOps, CI/CD, static checks
- **GUI Frameworks:** JavaFX, Java Swing, Java GUI development
- **Requirements Engineering:** Requirements analysis, requirements decomposition, traceability
- **Security Engineering:** Cross domain systems, security levels, memory safe applications
- **Integration Standards:** Customer requirements, certification standards, test environments
- **Clearance and Defense:** U.S. government SECRET clearance, aerospace computing, defense computing

EXPERIENCE

Secure Software Engineering Research Assistant

University Research Lab 📅 January 2026 - September 2026 📍 Ames, IA

Supported a six person research team developing a secure data transfer prototype across simulated security domains. Owned software components, traceable requirements, automated testing, isolated deployment, and hardware interface integration under faculty supervision.

- Built C++ and **Rust** components for secure data transfer across simulated security domains.
- Mapped system objectives into traceable requirements, **UML** models, and **SysML** diagrams.
- Managed **Git** branches, **Jira** defects, code reviews, and sprint tasks for six researchers.
- Created Python automated tests for interface behavior and failure cases during lab demonstrations.
- Containerized services for isolated testing and documented deployment steps, assumptions, and CI checks.
- Integrated prototype software with **hardware interfaces**, then documented data flow corrections.

STRENGTHS

- **Requirements Traceability**
Started with system objectives, then linked requirements, models, implementation tasks, and tests so reviewers could follow each decision.
- **Secure Coding**
Compared C, C++, and Rust in constrained exercises. That work made memory safety tradeoffs clearer during design reviews.
- **Team Delivery**
Managed Git branches and Jira work for six researchers. Teammates sought help when sprint tasks or defects became unclear.
- **Test Discipline**
Built Python checks for interface failures and repeatable demonstrations. Reliable evidence gave lab reviewers confidence in results.
- **System Integration**
Connected prototype software with hardware interfaces and investigated data flow discrepancies. Clear corrective notes kept testing moving.

SKILLS

<u>Requirements analysis</u>			
<u>Requirements decomposition</u>			
<u>Embedded software</u>	<u>C</u>	<u>C++</u>	<u>Rust</u>
<u>Python testing</u>	<u>Git</u>	<u>Jira</u>	<u>UML</u>
<u>SysML</u>	<u>Virtualization</u>	<u>Containers</u>	
<u>DevSecOps</u>		<u>CI/CD</u>	

LANGUAGES

English	Native
Spanish	Beginner

MY CAREER



- Secure Software Engineering Research Assistant at University Research Lab (8 Months)
- Embedded and Memory Safe Software Project Developer at Student Lab (1.2 Years)

Embedded and Memory Safe Software Project Developer

Student Lab 📅 September 2024 - December 2025 📍 Ames, IA

Completed supervised **embedded software** work spanning C, C++, Rust, **virtualization**, JavaFX, microservices, containers, and CI/CD. Presented design decisions, test results, and security assumptions within a structured student engineering workflow.

- Compared **C**, **C++**, and Rust implementations across embedded exercises involving constrained resources.
- Configured virtual machines for isolated software testing and repeatable environment setup.
- Connected a **JavaFX** interface with simulated secure processing functions for test status review.
- Explored microservice boundaries, **containers**, and orchestration through a course deployment exercise.
- Added static checks and automated tests within a controlled student CI/CD workflow.
- Presented diagrams, test results, and security assumptions to multidisciplinary student reviewers.

PROJECTS

Secure Cross Domain Data Prototype 📅 2026

Built a supervised prototype for controlled data movement across simulated security levels. Combined C++, Rust, requirements traceability, UML and SysML diagrams, Python tests, containers, and hardware interface checks.

Memory Safe Embedded Test Bench 📅 2025

Compared embedded C, C++, and Rust implementations inside virtual machines. Documented resource behavior, test setup, JavaFX status views, and practical memory safety observations.

LEADERSHIP & AWARDS

- Dean's List, Iowa State University, 2025 and 2026
- Undergraduate Research Poster Recognition, 2026
- Cyber Defense Student Group, Lab Coordinator, 2026

CERTIFICATIONS

- Active U.S. Government SECRET Clearance 📅 2026
- Coursera Rust Fundamentals 📅 2026
- Microsoft Learn Introduction to DevOps 📅 2025

PROFESSIONAL AFFILIATIONS

- Cyber Defense Student Group, Lab Coordinator, 2026
- Computer Science Peer Mentor, 2025 to 2026

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST