

Cecilia Simpson

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SUMMARY

Early career software engineering candidate completing a Bachelor of Science in Computer Engineering in 2027, with supervised laboratory and capstone work focused on C, C++, and C# applications. Built simulator components, **automated test equipment** utilities, synthetic RF scenarios, sensor data workflows, and database backed result histories. Applied **Object Oriented Analysis** and **Object Oriented Design** to create maintainable classes, clear interfaces, and reusable test components. Investigated failures through logs, controlled inputs, reference comparisons, and structured debugging. Communicated methods and findings through technical reports, spreadsheets, presentations, and multidisciplinary design reviews. Evaluated AI enabled coding suggestions against requirements, compiler output, tests, and responsible use guidance. Prepared for on site **electronic systems** development requiring U.S. citizenship and eligibility for a security clearance.

EDUCATION

Bachelor's Degree in Computer Engineering

2027

George Mason University GPA: 4.0

Fairfax, Virginia

Coursework: C programming, C++ programming, C# programming, Object Oriented Design, database systems

TECHNICAL SKILLS

- **Programming Languages:** C, C++, C#
- **Object Oriented Methods:** Object Oriented Analysis, Object Oriented Design, Class Design
- **Database Applications:** Relational Databases, Database Queries, Run Metadata
- **Simulation Software:** RF Simulation, Sensor Simulation, Advanced Simulators
- **Electronic Systems:** RF Systems, EO/IR Systems, Radar Receivers
- **Test Equipment:** Automated Test Equipment, Laboratory Testing, Bench Interfaces
- **Software Verification:** Reference Testing, Automated Checks, Defect Analysis
- **Development Tools:** Compilers, Debugging Logs, Configuration Files
- **Productivity Software:** Word Processing, Spreadsheets, Presentations
- **AI Tools:** AI Enabled Coding, Output Evaluation, Responsible AI
- **Documentation:** Technical Reports, Interface Documentation, Design Records

SKILLS

- | | | | |
|-------|-------------------------|----------------------------|-----------------------------|
| • C | • OOD | • Automated Test Equipment | • Radar Receiver Simulation |
| • C++ | • Database Applications | • Advanced Simulators | • Laboratory Testing |
| • C# | • Software Development | • RF Systems Concepts | • Software Verification |
| • OOA | • Software Maintenance | • EO/IR Systems Concepts | |

EXPERIENCE

Electronic Systems Software Capstone Student

August 2026 - Present

Capstone Project

Fairfax, Virginia

Supervised capstone role supporting a laboratory simulator, database utilities, automated checks, and bench scale electronic systems interfaces. Contributed software design, testing, documentation, and **responsible AI** evaluation for faculty and multidisciplinary reviews.

- Developed **C++** simulator software generating configurable signal scenarios for repeatable **electronic systems** testing.
- Applied **OOA** and **OOD** across configuration, signal generation, result processing, and user interaction classes.
- Implemented **C#** utilities connecting test metadata with relational database records for repeatable demonstrations.
- Created automated checks, analyzed logs, and isolated failed simulator behaviors before faculty design reviews.
- Integrated outputs with a bench interface representing communications and sensor equipment, documenting interface assumptions.
- Evaluated AI coding suggestions against requirements, compiler results, tests, and course policy guidance.

RF and Sensor Simulation Software Student

January 2026 - May 2026

Student Lab

Fairfax, Virginia

Supervised laboratory role developing C and C++ simulations for RF signals, radar receiver effects, sensor data, and database backed demonstrations. Supported cross disciplinary debugging, verification, analysis, and technical presentation work.

- Built **C** and **C++** exercises modeling **RF signals** and radar receiver effects with synthetic datasets.
- Designed object oriented waveform, receiver response, and result record components, reducing duplicated assignment logic.
- Compared simulated outputs with reference values, using test cases and spreadsheet analysis to investigate discrepancies.
- Stored scenario inputs and run summaries in a database application for repeatable **laboratory** demonstrations.
- Traced data flow across simulation code, configuration files, and representative **electronic systems** interfaces.
- Presented methods, limitations, and findings through technical reports, plots, and an oral laboratory review.

Automated Test Equipment Software Project Student

September 2025 - December 2025

University Project

Fairfax, Virginia

Supervised course project role creating **C#** and **C++** software for simulated **automated test equipment**, database history, diagnostics, and architecture demonstrations. Documented design choices and verified behavior for faculty evaluation.

- Created a **C#** desktop application sequencing simulated test equipment checks and displaying diagnostic outcomes.
- Used **OOA** to define test step, instrument interface, result, and configuration objects before implementation.
- Added database backed result history for comparing diagnostic outcomes across test configurations.
- Implemented **C++** computation modules and documented data exchanges with the **C#** application.
- Verified instructor supplied cases, documented defects, and summarized corrections in a spreadsheet.
- Demonstrated architecture, test logic, database use, and simulator concepts during a faculty evaluation.

PROJECTS

Synthetic RF Scenario Simulator 📅 2026

Started with a clear target, then built configurable synthetic signal scenarios, maintainable **C++** classes, controlled tests, and documented interfaces for laboratory electronic systems evaluation.

Automated Test Equipment Workflow 📅 2025

Focused effort on a practical result, creating a **C#** workflow with simulated checks, diagnostic history, database storage, and documented native code exchanges.

LEADERSHIP & AWARDS

- Dean's List, George Mason University, 2025
- Undergraduate Computing Project Award, 2026
- Student Laboratory Presentation Recognition, 2026
- Computer Engineering Peer Tutor, 2026

CERTIFICATIONS

- **C++ Programming Foundations** 📅 2026
- **Responsible AI Foundations** 📅 2026

PROFESSIONAL AFFILIATIONS

- Student Embedded Systems Project Group Member, 2025 to Present
- Engineering Outreach Volunteer, 2026
- Computer Engineering Peer Tutor, 2026

LANGUAGES

- English (Native)
- Spanish (Intermediate)

ADDITIONAL INFORMATION

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

REFERENCES

AVAILABLE ON REQUEST