

# Curt Lawson

**Aug 2020 – Present: Part-Time Instructor, Computer Science Department, University of Alabama in Huntsville** – Responsible for teaching introductory C programming in an online and asynchronous manner to undergraduate students in CS102, Intro to C Programming. Plan and develop course materials, assignments, and examinations using university course management system.

**Jan 2019 – Present: Senior Software Assurance Engineer, DESE Research** – Responsible for technical leadership of team performing research and development of binary analysis techniques for U.S. Army Combat Capabilities Development Command (CCDC) Aviation & Missile Center. Investigates tools and techniques for static/dynamic binary analysis, reverse engineering, and emulation. Demonstrates tools and techniques on representative software systems. Develops suitable and effective processes and procedures for incorporating binary analysis into ongoing organizational software assurance activities.

**Aug 2017 – Jan 2019: Software Assurance Engineer, Parsons** – Responsible for providing subject matter expertise to the Director of Software Engineering for the Missile Defense Agency in the areas of software assurance, software readiness, software reliability, software independent verification & validation, software acquisition, and software process improvement.

- Served on the Software Assurance (SwA) IPT responsible for developing software assurance approach for MDA. Developed policies for software acquisition; updated systems engineering procedures for Engineering Technical Reviews; developed software assurance metrics for organizational mission assurance policies; supported the creation of briefings for executive leadership.
- Developed and delivered briefings internally to a variety of MDA organizations related to software assurance.
- Provided key support in ongoing efforts towards adopting and/or adapting to Agile Engineering methods in MDA. Developed Agile metrics for organizational mission assurance policies; supported the development of Agile Engineering briefing for MDA Chief Engineer; participated in Agile working groups with MDA Quality Assurance and various MDA Program Elements.
- Supported MDA Program Element Software IPTs. Represented Director of Software Engineering in weekly meetings; provided support for Monthly Software Technical Analysis Report development; supported multiple site visits at supplier locations.
- Provided support for multiple MDA Program Element Engineering Technical Reviews at significant program milestones. Reviewed Program Element Technical Review Action Plans; verified compliance with software-related Entrance and Exit Criteria for MDA ETRs; represented the Director of Software Engineering at various ETRs for MDA Program Elements.

**Sep 2015 – Aug 2017: Senior Software Engineer, Craft Designs, Inc.** – Served as member of senior technical staff; provided oversight and mentorship of junior software and test engineers. Performed software project planning activities, including preparation of software size/effort estimates, software development plans, and software test plans. Performed requirements and task analysis. Performed software design activities. Performed software construction and unit testing. Participated in continuous process improvement activities.

- Served as primary software engineer for research, design, and implementation of prototype software system for Machine Learning for U.S. Army AMRDEC Aviation Engineering Directorate Apache Nose Gearbox project.
- Participated in successful and expedited AMRDEC Prototype Integration Facility project to update onboard & desktop trainer software for Iraqi Bell 407 avionics.
- Served as primary technical engineer on project to modernize the U.S. Forest Service Modular Airborne Fire Fighting System.
- Provided leadership in continuous improvement: introduced Agile techniques to organizational process improvement and project management activities; improved managed decision-making process; and improved employee on-boarding process.
- Served as member of assessment team for CMMI DEV ML-3 assessment.

**Oct 2008 – Sep 2015: Senior Software Engineer, Northrop Grumman Corp.** – Supported ground platform C4ISR software development. Serve as primary software architecture and design point of contact for team and customers. Wrote and modified Program procedures. Collected, analyzed, and reported source code metrics. Provide SW support for significant program milestones and demonstrations. Performed requirements analysis, design, code, unit-test, and integration of SW programs. Provided technical direction for software products within organization. Reported schedule performance, % complete, and status. Briefed customers and corporate on dept. activities. Supported Bid & Proposal efforts for Sector and Corporate must-win opportunities. Contributed to Sector-wide software engineering organizations supporting best practices within company. Contributed to performance appraisals and development.

- Served as software product manager for Corporate priority international business opportunity; responsible for leveraging legacy and developmental software to create integrated system of systems to form the basis of a product line offering for NGC.
- Led the adoption of Agile methods using Scrum. Coordinated training, served as product owner, acted as advocate to leadership.
- Served as chief software designer / developer over four years during major ground vehicle program pursuit and execution.
- Introduced and implemented Continuous Integration to the team's development processes.
- Led the adoption of secure coding practices by the software team: volunteered for and attended NGC Cyber Academy; integrated Coverity into the Continuous Integration process; authored secure coding Program procedure for department.
- Assisted in multiple simultaneous business capture activities by providing rapid software prototyping support as needed.

**Oct 2005 - Oct 2008: Software Engineer, Craft Designs, Inc.** - Responsible for providing software engineering support services in support of ongoing U.S. Army avionics operations and maintenance activities. Provided leadership in area of software process implementation for customer organization. Developed software requirements; documented software design; wrote, debugged, and unit tested source code; reviewed software test procedures. Represented customer at meetings, integration events, and test events.

- Created domain-specific language, compiler, and embedded interpreter to provide automated test and data-driven model development capabilities to U.S. Army AED Aerospace Engineers.
- Developed mathematical simulation models of helicopter and fixed-wing aircraft performance and corresponding test automation software using C, C++, and C#. Data used for on-board mission planning, aircraft Dash 10 Manual charts, and desktop analysis.
- Developed and fielded software using DO-178B Level A safety guidelines; performed MC/DC structural coverage analysis.

**Dec 2002 - Oct 2005: Software Engineer, Northrop Grumman Corp. (formerly TRW)** – Support real-time software development and integration for Ground Based Midcourse Defense (GMD) IFICS Data Terminal (IDT). Responsible for software modules from design to test and maintenance support. Documented and presented design and code for formal peer review to team members and customers. Integrated software into system in laboratory. Provided on-site support during Integration & Checkout. Investigated problem reports and fixed defects in legacy software modules.

- Performed design and development of embedded real-time antenna pointing correction software for SBX IDT.
- Developed “sun scan” software that created look-angles to Sun; used for antenna calibration during I&CO and pre-Flight Test.

**Jan 2001 - Dec 2002: Software Engineer, Sanmina-SCI Corp.** – Responsible for embedded software development in support of avionics equipment systems. Wrote derived SW requirements and test procedures. Designed, implemented, and unit tested SW modules that run directly on microcontroller – no RTOS – and interface with onboard I/O and memory. Performed HW/ SW integration. Presented development artifacts for formal peer reviews. Implemented engineering change orders after delivery of SW for production.

**Currently pursuing Ph.D. in Computer Science at University of Alabama in Huntsville**

**MS Software Engineering, University of Alabama in Huntsville, 2012, Thesis: Sentential Access Control**

**BS Computer Science, University of Alabama in Huntsville, 2000**