

# RICHARD L. RUTLEDGE

## PERSONAL INFORMATION

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## EDUCATION

*PhD in Computer Science*  
Aug 2013 - Dec 2022 Georgia Institute of Technology  
College of Computing · School of Computer Science  
Advisor: Alessandro Orso

*MS in Software Engineering*  
Jun 2011 - May 2013 Southern Polytechnic State University  
School of Computing and Software Engineering  
GPA: 4.0 · President of SPSU chapter of Upsilon Pi Epsilon  
Thesis: Formal Specification Driven Development.  
Advisor: Dr. Frank Tsui

*BS in Mathematics*  
Aug 1981 - June 1985 The University of Georgia  
Franklin College of Arts and Sciences  
Strahn Scholarship Award · Georgia Alumni Scholarship  
President of Mathematics Club · Vice Presedent of Pi Mu Epsilon  
Advisors: Dr. John Hollingsworth & Dr. Ted Shiffrin

## PUBLICATIONS

### Conference Papers

R. Rutledge, A. Orso, “Automating Differential Testing with Overapproximate Symbolic Execution”, *15th IEEE International Conference on Software Testing, Verification, and Validation (ICST)*, Valencia, Spain, April 2022.

R. Rutledge, A. Orso, “Progressive Symbolic Execution Demonstration”, *42nd International Conference on Software Engineering (ICSE)*, Seoul, South Korea, June 2020.

R. Rutledge, S. Park, H. Khan, A. Orso, M. Prvulovic, and A. Zajic, “Zero-Overhead Path Prediction with Progressive Symbolic Execution”, *41st International Conference on Software Engineering (ICSE)*, Montréal, QC, Canada, May 2019.

R. Rutledge, A. Massey, A. Antón, and P. Swire, “The Relationship of Security and Privacy for the Internet of Things”, *7th Annual Privacy Law Scholars Conference*, Washington, DC, June 2014.

A. Massey, R. Rutledge, and A. Antón, "Identifying and Classifying Ambiguity for Regulatory Requirements", *22nd IEEE International Requirements Engineering Conference (RE)*, Karlskrona, Sweden, pp. 83–92, 2014.

R. Rutledge, S. Duggins, D. Lo, and F. Tsui, "Formal Specification Driven Development," *26th International Conference on Software Engineering and Knowledge Engineering (SEKE)*, Las Vegas, NV, 2014.

J. Lartigue, R. Rutledge, and A. Rice, "Paper or Pixel: Assessing Reading Performance Across Multiple Mediums," *World Conference on Educational Multimedia, Hypermedia and Telecommunications*, 2013, vol. 2013, pp. 1045–1052.

### Workshop Papers

R. Rutledge, A. Orso, "Improving Floating Point Symbolic Execution Coverage with Fixed Point Approximations", *3rd International KLEE Workshop on Symbolic Execution*, London, UK, Sept 2022.

R. Rutledge, A. Orso, "Extending KLEE to Support Behavioral Regression Testing", *2nd International KLEE Workshop on Symbolic Execution*, London, UK, June 2021.

R. Rutledge, A. Orso, "Continuous Automated Regression Testing", *International KLEE Workshop on Symbolic Execution*, London, UK, June 2018.

R. Rutledge, A. Massey, and A. Antón, "Privacy Impacts of IoT Devices: A SmartTV Case Study", *International Workshop on Requirements Engineering and Law (RELAW)*, Beijing, China, pp. 261 - 270, 2016.

### TEACHING EXPERIENCE

*Fall 2020 - Summer 2022* CS 6300 Software Development Process

*Georgia Institute of Technology*

Head Teaching Assistant:

A course in the Online Master of Science in Computer Science program in which students study and learn the way software is specified, designed, developed, verified, and maintained.

*Fall 2019* CS 6301 Advanced Topics in Software Engineering

*Georgia Institute of Technology*

Teaching Assistant:

An advanced course in software engineering teaching students the role of software processes in the development of software with a special emphasis on modern approaches such as web services and continuous integration/continuous deployment.

*Spring 2014* CS 4912 Design Capstone Project

*Georgia Institute of Technology*

Instructor:

Team-based capstone project allowing students to analyze a problem for a customer and manage the solution development through the full project life cycle.

*Fall 2012* SWE 6743 Object-Oriented Analysis

*Southern Polytechnic State University*

Teaching Assistant:

This course focuses on object-oriented modeling techniques necessary to solve complex, real-

world software engineering problems, including a major iterative project in which students gain hands-on experience modeling a real-time system using use case analysis, responsibility-driven design, UML, and RealTime UML.

## PROFESSIONAL EXPERIENCE

1991–2011 SYSTEMS ATLANTA, INC.

*Director of  
Engineering*

Summary of responsibilities:

- Led Software Development, Engineering, Training, and Technical Support Services Departments
- Managed all SAI Independent Research and Development (IR&D) projects, including the IDS product line, FPAS, and other SAI products
- Instituted Agile development processes (SCRUM)
- Led complete Software Development Life Cycle (SDLC)
- Directed development of specifications for system requirements
- Oversaw implementation of requirements in IDS systems
- Coordinated system programming team for development of IDS systems
- Oversaw software testing, configuration management, and quality assurance
- Researched new products/latest technology for utilization/adaptation in the IDS product line and other systems
- Supervised technical and product support services to customers

*Management  
Representative,  
Quality  
Management  
System*

Summary of responsibilities:

- Ensured that the Quality Management System (ISO 9001) processes were established, implemented, and maintained
- Reported on the performance of the Quality Management System to Board of Directors
- Monitored and analyzed the Quality Management System for to identify areas of improvement
- Liaised with external parties on matters pertaining to the Quality Management System

1990–1991 SYSTEMS ATLANTA, INC.

*Systems  
Programmer*

Summary of responsibilities:

- Participated in research and development of overall system design of IDS<sub>4</sub> software product suite
- Designed and developed IDS<sub>4</sub> sub-modules in C and Assembler

## TECHNICAL SKILLS

*Advanced  
Intermediate*

Assembler, C/C++, C#, Microsoft Windows

L<sup>A</sup>T<sub>E</sub>X, Java, Objective C, Ruby, Python, Linux, Mac OSX

## HONORS / AWARDS

*Awards*

1999 · Letter of commendation from David Whatley, ARW-1, FAA Program Director for Aviation Weather, for outstanding accomplishment as Program Engineer on FAA IDS Y2K Contracts awarded to SAI in 1998-99

1984 · Strahn Scholarship Award  
1981 · Georgia Alumni Scholarship

*Affiliations*

ATCA · Air Traffic Control Association  
IEEE · Institute of Electrical and Electronics Engineers  
ACM · Association for Computing Machinery

October 28, 2022