Trevor Stalnaker

Research Interests

Software engineering (SE); software supply chains; software license compliance; open-source software; quantum computing; generative AI; digital humanities; computer science education.

Professional Experience

Research Assistant in the Department of Computer Science**,** William & Mary**,** Williamsburg, VA, Summer 2022 – present

Teaching Assistant in the Department of Computer Science**,** William & Mary**,** Williamsburg, VA, Fall 2021 – Spring 2023

High School Computer Science Teacher at Parry McCluer High School, Buena Vista City Schools, Buena Vista, VA, Fall 2020 – Spring 2021

Lead Web Application Developer for The Ancient Graffiti Project**,** Washington & Lee University**,** Lexington, VA, May 2019 – August 2021

Lab Assistant, Department of Computer Science, Washington & Lee University, Lexington, VA, Winter 2018; Fall 2019

Practicum Student in Rockbridge Teacher Education Consortium, Lexington, VA, 2017 – 2019

Education

Doctor of Philosophy in Computer Science (2021-2026) [expected]
William & Mary, Williamsburg, VA
Dissertation title: *Towards Effective Supply Chain Management for Software Systems*
Advisors: Dr. Denys Poshyvanyk and Dr. Oscar Chaparro

Master of Science in Computer Science (2021-2023)
William & Mary, Williamsburg, VA
Thesis: *A Comprehensive Study of Bills of Materials for Software Systems*

Bachelor of Science in Computer Science (2016-2020)
Washington & Lee University, Lexington, VA
Thesis title: *Procedural Generation of Metroidvania Style Levels*
Minors: Education and Classics

Licenses and Certifications

Virginia Middle and Secondary Education Collegiate Professional License.....2021-present

Honors and Awards

Virginia Space Grant Consortium Graduate Research Fellowship.....2023-2025

ACM SIGSOFT Distinguished Paper Award, ACM International Conference on the Foundations of Software Engineering (FSE'24).....2024
President's List at Washington & Lee University.....2016-2020
Computer Science Honor's Award at Washington & Lee University.....2020
Phi Beta Kappa Honor Society.....2020-present
National Latin Translation Award, The Classical Association of the Middle West and South (CAMWS).....2019
Calculus Award, Highest average score in Jackson River Governor's School Dual Enrollment calculus course.....2016
Chemistry Award, Highest average score in Jackson River Governor's School Dual Enrollment chemistry course.....2015
Statistics Award, Highest average score in Jackson River Governor's School Dual Enrollment statistics course.....2015

Peer-Reviewed Journal Articles

[J2] **Stalnaker, T.**, Wintersgill, N., Chaparro, O., Heymann, L., Di Penta, M., German, D., and Poshyvanyk, D., "An Empirical Analysis of Machine Learning Model and Dataset Documentation, Supply Chain, and Licensing Challenges on Hugging Face", *ACM Transactions on Software Engineering and Methodology (TOSEM).*

[J1] **Stalnaker, T.**, Wintersgill, N., Chaparro, O., Heymann, L., Di Penta, M., German, D., and Poshyvanyk, D., "Developer Perspectives on Licensing and Copyright Issues Arising from Generative AI for Coding", *ACM Transactions on Software Engineering and Methodology (TOSEM), June 6, 2025.*

Peer-Reviewed Conference Publications

[C5] Tongen, M., Sprenkle, S., Benefiel, R., and **Stalnaker, T.**, "Semantic Search for Ancient Inscriptions", *in Proceedings of the 6th Conference on Computational Humanities Research (CHR'25), Luxembourg, Luxembourg, December 9-12, 2025.*

[C4] Zappin, J., **Stalnaker, T.**, Chaparro, O., and Poshyvanyk, D., "When Quantum Meets Classical: Characterizing Hybrid Quantum-Classical Issues Discussed in Developer Forums", *in Proceedings of the 47th IEEE/ACM International Conference on Software Engineering (ICSE'25), Ottawa, Ontario, Canada, April 27- May 3, 2025, pp. 2931-2943.*

[C3] **Stalnaker, T.** "Understanding and Supporting the ML Supply Chain Through ML Bill of Materials", *in Companion Proceedings of the IEEE/ACM 47th International Conference on Software Engineering (ICSE'25), pp. 1-3, 2025, pp. 1-3. (Doctoral Symposium).*

[C2] Wintersgill, N., **Stalnaker, T.**, Heymann, L., Chaparro, O., and Poshyvanyk, D., "The Law Doesn't Work Like a Computer": Exploring Software Licensing Issues Faced by Legal Practitioners", *in Proceedings of the ACM International Conference on the Foundations of Software Engineering (FSE'24), Porto de Galinhas, Brazil, Brazil, July 15-19, 2024, pp. 882-905, PACMSE Vol. 1, FSE, Article 40.* This paper won the **ACM SIGSOFT Distinguished Paper Award**

[C1] **Stalnaker, T.**, Wintersgill, N., Chaparro, O., Di Penta, M., German, D., and Poshyvanyk, D., "BOMs Away! Inside the Minds of Stakeholders: A Comprehensive Study of Bills of Materials for Software Systems", *in Proceedings of the 46th IEEE/ACM International Conference on Software Engineering (ICSE'24), Lisbon, Portugal, April 14-20, 2024, pp. 1-13.*

Workshop Papers

[W1] Zappin, J., **Stalnaker, T.**, Chaparro, O., and Poshyvanyk, D., "Bridging the Quantum Divide: Aligning Academic and Industry Goals in Software Engineering", *in Proceedings of the 6th International Workshop on Quantum Software Engineering (Q-SE 2025), Ottawa, Ontario, Canada, April 27- May 3, 2025, pp. 43-47.*

Papers Currently Under Review

[R3] Zappin, J., **Stalnaker, T.**, Chaparro, O., and Poshyvanyk, D., "Challenges and Practices in Quantum Software Testing and Debugging: Insights from Practitioners", *minor revision under review at ACM Transactions on Software Engineering and Methodology (TOSEM).*

[R2] Wintersgill, N., **Stalnaker, T.**, Otten, D., Heymann, L., Chaparro, O., Di Penta, M., German, D., and Poshyvanyk, D., "Developers' Perspectives on Software Licensing: Current Practices, Challenges, and Tools", *under review at the 48th IEEE/ACM International Conference on Software Engineering (ICSE'26), Rio de Janeiro, Brazil, April 12-18, 2026.*

[R1] Otten, D., **Stalnaker, T.**, Wintersgill, N., Chaparro, O., and Poshyvanyk, D., "Prompting in Practice: Investigating Software Developers' Use of Generative AI Tools", *under review at the 48th IEEE/ACM International Conference on Software Engineering (ICSE'26), Rio de Janeiro, Brazil, April 12-18, 2026.*

Teaching Experience

Instructor of Record, William & Mary
Programming for Data Science Lab (CSCI-140L, Undergraduate).....Spring 2023
Teaching Assistant, William & Mary
Programming for Data Science (CSCI-140, Undergraduate).....Spring 2023
Principles of Programming Languages (CSCI-312, Undergraduate).....Fall 2021, Fall 2022
Computer Animation (CSCI-417, Undergraduate).....Spring 2022
Instructor, Parry McCluer High School
Information Technology (Grades 9-12; Two sections).....Spring 2021
AP Computer Science A (Grades 9-12).....Fall 2020 – Spring 2021
Keyboarding (Grade 8; Eight sections).....Fall 2020 – Spring 2021
Web Design (Grades 9-12).....Fall 2020
Lab Assistant, Washington & Lee University
Introduction to Computer Science (CSCI-111, Undergraduate).....Fall 2019
Data Structures (CSCI-112, Undergraduate).....Winter 2018

Guest Lectures

Design Patterns in the Age of Generative AI, William & Mary (Fall 2025)
Course: Software Engineering (CSCI-435, Undergraduate)

SBOMs and Software Supply Chains, William & Mary (Spring 2025)
Course: Advanced Software Engineering (CSCI-635, Graduate)

Design Patterns, William & Mary (Fall 2024, Fall 2023)
Course: Software Engineering (CSCI-435, Undergraduate)

Introduction to Haskell, William & Mary (Fall 2022)
Course: Principles of Programming Languages (CSCI-312, Undergraduate)

Talks, Presentations, and Posters

Understanding and Supporting the ML Supply Chain Through ML Bill of Materials, poster at the 47th IEEE/ACM International Conference on Software Engineering .....Spring 2025
An Analysis of the Machine Learning Supply Chain on Hugging Face, Virginia Space Grant Consortium (VSGC) Research Symposium .....Spring 2025
BOMs Away! Inside the Minds of Stakeholders: A Comprehensive Study of Bills of Materials for Software Systems, the 46th IEEE/ACM International Conference on Software Engineering.....Spring 2024
SBOMs as a Solution in the Software Supply Chain, Virginia Space Grant Consortium (VSGC) Research Symposium .....Spring 2024
Software Bills of Materials as a Solution in the Software Supply Chain, Eastern Atlantic Students in Software Engineering Colloquium (ESSEC).....Spring 2024
Intro to Text Processing, William & Mary (Cypher VIII).....Spring 2023
Advanced Python Tricks, William & Mary (Cypher VIII).....Spring 2023
Intro to HTML and CSS, William & Mary (Cypher VIII).....Spring 2023
Intro to Data Science II, Washington & Lee (Robotics Club).....Spring 2020
Intro to Data Science I, Washington & Lee (Robotics Club).....Spring 2020

Student Supervision and Mentoring

Project Leading

Project: Analysis of Contemporary License Compliance Tooling
Student: Gigi Kuffa
Context: Undergraduate research assistant
Dates: Fall 2025

Project: Exploration of Existing SBOM Tooling Capabilities
Student: Abhayprad "Abe" Jha
Context: Undergraduate research assistant
Dates: Fall 2025

Project: Development of the Survey Research Toolkit
Students: 35 undergraduate students
Context: Six teams of undergraduate students for CSCI-435 projects
Dates: Fall 2025

Project: Investigating Using LLM for Close-Coding Tasks on Software Engineering Domain
Student: Robiul Islam
Context: Graduate student class project in CSCI-635
Dates: Spring 2025

Project: Development of the Survey Research Toolkit
Students: Alex Batts, Justin Cresent, Gisi Martinez-Campa, Miles Saunders, Kimberly Sejas, and Marshall Wright
Context: Team of six undergraduate students for CSCI-435 project
Dates: Fall 2024

Project: SBOM Visualization
Students: Thomas Eby, Pranav Gonepalli, Evan Hellersund, Manel Leong, Camron Rule, Skyler Walker, Duohan Xu, and Rachel Zheng
Context: Team of eight undergraduate students for CSCI-435 project
Dates: Fall 2024

Project: MELT: Mutation Framework for the Evaluation of Licensing Tools

Students: Katelyn Beasley, Nicolette Glutt, Anna Jordan,
Chase Packer, Ryan Russell, and Andrew Sass
Context: Team of six undergraduate students for CSCI-435 project
Dates: Fall 2023

Advising

Project: Semantic Search for Ancient Inscriptions
Student: Micah Tongen
Context: Advised on undergraduate summer research project
Dates: Summer 2025

Project: MELTing Away False Confidence in Licensing Tools: The Mutation Framework for Evaluation
Student: Nicolette Glutt
Context: Advised on graduate student master's project
Dates: Spring 2025

Mentoring

Student: Danny Otten
Context: Mentored junior Ph.D. student
Dates: Fall 2024-present

Grant Writing Experience

Assisted my advisors with NSF grant proposal preparation:

NSF, "EAGER: FDASS: Towards Effectively Managing the AI/ML Supply Chain in the Era of Software 2.0," (not funded).

NSF, "SHF:NSF-MUR: Automated and Explainable Provenance of AI-Generated Code," (under review).

College Service

Departmental service:

Coordinated and led hiring effort for undergraduate research assistants for the SEMERU research lab at William & Mary.....Fall 2025
Student Panelist at the William & Mary Computer Science Graduate Symposium.....2024
Student Volunteer for William & Mary Computer Science Graduate Symposium.....2022, 23, 24

College service:

Member of Vice Dean Advisory Committee.....Fall 2024-Spring 2025
Rockbridge Teacher Education Consortium Advisory Board.....2018-2023

Professional Service

Student Volunteer:

Foundations of Software Engineering (FSE).....2024
Eastern Atlantic Students in Software Engineering Colloquium (ESSEC).....2024

External Paper Reviewer:
I have written reviews and assisted my advisors in the writing of reviews for the following:

IEEE Transactions on Software Engineering (TSE).....2025
Empirical Software Engineering (EMSE).....2025
IEEE/ACM International Conference on Software Engineering (ICSE).....2024-2025
IEEE International Conference on Software Maintenance and Evolution (ICSME).....2023-2025
Foundations of Software Engineering (FSE).....2023-2024
International Conference on Program Comprehension (ICPC).....2023
ACM Transactions on Software Engineering and Methodology (TOSEM).....2022
IEEE/ACM International Conference on Automated Software Engineering (ASE).....2022

Volunteering and Community Involvement

Math tutoring at Williamsburg Community Chapel.....2023-present
Programming club for middle schoolers at Christ Fellowship Church.....2023-2024
After-school programming club at Parry McCluer High School.....Spring 2021
Latin Club Volunteer at Waddell Elementary School.....2019-2020
W&L Robotics at Maury River Middle School.....2018-2020