

LARRY JOSHUA CROTTS

Curriculum Vitae

Greensboro, NC 27401

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AREAS OF EXPERTISE

Proficient Languages: Java, C, C++, Python

Foundational Languages: Scheme, F#, Prolog, Haskell, OCaml, C#, Rust, Julia, Assembly

Tools: Git, Visual Studio Code, IntelliJ, Eclipse, NetBeans, Vim

Operating Systems: Linux (Ubuntu, Mint, Arch-based distros), MacOS, Windows

Research Interests: Programming Languages, Compilers, Theory of Computing, Algorithm Analysis, Data Structures, Parallel Computing, Computer Architecture, Artificial Intelligence, Computer Science Education

EDUCATION

Ph.D Department of Computer Science, Indiana University Bloomington, 2026

M.S. Department of Computer Science, University of North Carolina Greensboro, 2022

Thesis: *Construction and Evaluation of a Gold Standard Syntax for Formal Logic Formulas and Systems*

B.S. Department of Computer Science, University of North Carolina Greensboro, 2021

Project: *A Visual Improvement to the Pedagogy of Introductory Logic*

Latin honors: summa cum laude, Outstanding Undergraduate Student Awardee in computer science, honors student, Phi Beta Kappa member, STAMPS (NSF) Scholar, Accelerated Master's Program student, Chancellor's List Fall 2018 – Spring 2021

PROFESSIONAL EXPERIENCE

Aug 2022-present Associate Instructor, Department of Computer Science, Indiana University Bloomington

Aug 2021-present Graduate Teaching Assistant, Department of Computer Science, University of North Carolina Greensboro

Aug 2021-present Online Computer Science Tutor, Pearson Inc.

Dec 2021-Sep 2021 Undergraduate Research Assistant, Department of Computer Science, University of North Carolina Greensboro

Sep 2020-May 2021 Introduction to Formal Logic Course Tutor, Department of Philosophy, University of North Carolina Greensboro

Aug 2020-May 2021 Graduate Assistant & Panopto Administrator, ITS Learning Technology Center, University of North Carolina Greensboro

Aug 2019-May 2021	Introduction to Computer Science Lab Assistant and Grader, Department of Computer Science, University of North Carolina Greensboro
Jan 2020-Sep 2020	Undergraduate Research Assistant, Department of Computer Science, University of North Carolina Greensboro
May 2019-Aug 2019	Undergraduate Research Assistant, Department of Computer Science, University of North Carolina Greensboro
Mar 2018-Oct 2018	IT Technician and Tutor, AgeWiser/TechStar Tutors

PUBLICATIONS

Conference Proceedings

Mar 2022	Nick Parlante, Julie Zelenski, Stephanie Valentine, Mike Izbicki, Eric S. Roberts, Jed Rembold, Juliette Woodrow, Kathleen Creel, Nick Bowman, Ben Stephenson, Jonathan Hudson, Larry "Joshua" Crotts , Andrew Matzureff. 2022. Nifty Assignments. In <i>Proceedings of the 53rd ACM Technical Symposium on Computer Science Education V. 2</i> (SIGCSE 2022), March 3– 5, 2022, Providence, RI, USA. ACM, New York, NY, USA, 2 pages. https://doi.org/10.1145/3478432.3499268
Sep 2021	Nancy L. Green and L. Joshua Crotts . “A First Experiment Using ILP for Argument Mining,” in <i>Proceedings of the 21st Workshop on Computational Models of Natural Argument</i> . September 2-3, 2021. Online.
Sep 2020	Nancy L. Green and L. Joshua Crotts . “Towards Automatic Detection of Antithesis,” in <i>Proceedings of the 20th Workshop on Computational Models of Natural Argument, co-located with the 8th International Conference on Computational Models of Argument (COMMA)</i> . September 8, 2020. Perugia, Italy (and online).
Sep 2020	Nancy L. Green and L. Joshua Crotts . “Argument Schemes in AI Ethics Education,” in <i>Proceedings of the 20th Workshop on Computational Models of Natural Argument, co-located with the 8th International Conference on Computational Models of Argument (COMMA)</i> . September 8, 2020. Perugia, Italy (and online).

University Research

Dec 2021	Joshua Crotts . “An Investigation of Compiler-Induced Vulnerabilities and Insecure Optimizations.” <i>Computer Security Graduate Research Paper</i> . December 2021. University of North Carolina Greensboro.
Aug 2021	Joshua Crotts and Christopher Brantley. “On an Enhanced Hands-on Approach to Formal Logic Education.” University of North Carolina Greensboro.
Apr 2021	Joshua Crotts , Ali Altamimi, Harinder Badesha, Christopher Brantley, and Nadia Doudou. “A Visual Improvement to the Pedagogy of

- Introductory Logic,” in *15th Annual Undergraduate Creativity Expo. Bachelor Capstone Project*. April 2021. University of North Carolina Greensboro.
- Apr 2021 **Joshua Crotts**. “Binary Space Partitioning: A Focus on Rendering and Compression Algorithms,” in *21st Annual Undergraduate Honors Symposium. Algorithm Analysis Graduate Research Paper*. April 2021. University of North Carolina Greensboro.
- Dec 2020 **Joshua Crotts**. “An Insight into Buffer Overflow Attacks and Kernel Security in Operating Systems.” *Operating Systems Graduate Research Paper*. December 2020. University of North Carolina Greensboro.
- Apr 2020 **Joshua Crotts** and Nancy L. Green. “Automatic Detection of Rhetorical Devices in Science Policy Articles,” in *14th Annual Undergraduate Creativity Expo*. April 2020. University of North Carolina Greensboro.

In-Progress Manuscripts

- Dec 2021 **Joshua Crotts**. “Automatic Generation of Syntactically Valid and Semantically Sound Arguments in Natural Language.” University of North Carolina Greensboro.
- Dec 2021 **Joshua Crotts**. “The Optimization of Largely-Populated Emitters in Particle Systems. University of North Carolina Greensboro.

TEACHING EXPERIENCE (Teaching Assistant)

- Spring 2022 CSC 490 – Senior Capstone. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 471 – Principles of Database Systems. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 462/662 – Principles of Operating Systems. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 454/654 – Algorithm Analysis & Design. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 362 – System Programming. Department of Computer Science. University of North Carolina Greensboro (1 section).
- Fall 2021 CSC 490 – Senior Capstone. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 471 – Principles of Database Systems. Department of Computer Science. University of North Carolina Greensboro (1 section).
 CSC 362 – System Programming. Department of Computer Science. University of North Carolina Greensboro (2 sections).
- Spring 2021 PHI 310 – Introduction to Formal Logic. Department of Philosophy. University of North Carolina Greensboro (1 section).

	CSC 130 – Introduction to Computer Science. Department of Computer Science. University of North Carolina Greensboro (2 sections).
Fall 2020	PHI 310 – Introduction to Formal Logic. Department of Philosophy. University of North Carolina Greensboro (1 section). CSC 130 – Introduction to Computer Science. Department of Computer Science. University of North Carolina Greensboro (2 sections).
Spring 2020	CSC 130 – Introduction to Computer Science. Department of Computer Science. University of North Carolina Greensboro (1 section).
Fall 2019	CSC 130 – Introduction to Computer Science. Department of Computer Science. University of North Carolina Greensboro (1 section).

SERVICE/VOLUNTEERING

Fall 2021	Hosted optional weekly recitation sessions for CSC 362 – System Programming, where I would demo practical programming examples, answer questions, and clarify theoretical topics for students.
Spring 2021	Created a Minecraft code.org tutorial for the remote NSF-funded research study Science Everywhere at the University of North Carolina Greensboro.
Spring 2020	Undergraduate representative member of the search committee for a new assistant professor position in computer science at the University of North Carolina Greensboro. Reviewed over 90 professional curriculum vitae, participated in remote and in-person interviews.

HONORS/AWARDS/SCHOLARSHIPS

2021	Graduate Computer Science Assistantship; University of North Carolina Greensboro
2021	Margaret Ann Cassidy Scholarship in Computer Science; University of North Carolina Greensboro
2020-2021	Science, Technology, and Math Prep. Scholarship (STAMPS); University of North Carolina Greensboro
2020-2021	Margaret Ann Cassidy Scholarship in Computer Science; University of North Carolina Greensboro
2020-2021	White Science Research Award; University of North Carolina Greensboro
2020-2021	Burgess Honors Scholarship; University of North Carolina Greensboro
2020-2021	Outstanding Student Excellence Award in Computer Science; University of North Carolina Greensboro

2020-2021	Provost Student Excellence Award; University of North Carolina Greensboro
2019-2020	Mary D. Murray Scholarship in Computer Science; University of North Carolina Greensboro
2018-2019	Samanage Success Scholarship in Computer Science; University of North Carolina Greensboro