Nicholas Gardella

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EDUCATION

University of Virginia, School of Engineering & Applied Science, Charlottesville, VA   *August 2021 - Present*
PhD Candidate- Systems & Information Engineering
- Dissertation: Responsible and Equitable Use of AI Code Generators in Computer Science Education
- Anticipated defense Spring 2026
- Committee: Dr. Sara Riggs (Adviser), Dr. Matthew Bolton (Chair), Dr. Raymond Pettit (Computer Science), Dr. Seongkook Heo (Computer Science), Dr. Tariq Iqbal (Dually Appointed)

University of Virginia, School of Engineering & Applied Science, Charlottesville, VA   *August 2021 - Present*
Certificate- Cyber-Physical Systems

University of Virginia, Charlottesville, VA   *August 2021 - May 2023*
Master of Engineering- Systems & Information Engineering
- GPA : 3.975 / 4.0

Virginia Tech, Blacksburg, VA   *August 2018 - May 2021*
Bachelor of Science- Computer Science
- Major GPA: 3.89 / 4.0
- Overall GPA: 3.87 / 4.0

University of Virginia, Charlottesville, VA   *June 2017 - August 2018*
Spanish Summer Language Institute
- GPA : 4.0 / 4.0

Piedmont Virginia Community College, Charlottesville, VA   *August 2016 - May 2018*
- GPA : 4.0 / 4.0

TEACHING EXPERIENCE

Adjunct Instructor (IT Programming), **New River Community College,** Christiansburg, VA   *January 2025 - May 2025*
- Led instruction and redesigned curriculum for "Client Side Scripting" frontend web programming course, enrollment of 11
- Led instruction and redesigned curriculum for "Web Scripting Languages" full-stack web programming course, enrollment of 16

Mentor/Supervisor, **UVA Riggs Lab,** Charlottesville, VA   *January 2023 - August 2023*
- Supervised three undergraduate students on programming and data analysis tasks
- Co-developed tactile actuator control systems to integrate with TCP/IP protocols and E-Prime psychology software
- Developed & administered extra-curricular instruction on Git, Docker, Rust language, and R language
- Facilitated undergraduate qualitative and quantitative data cleaning, analysis, and visualization skill development
- Oriented undergraduates to technical reading and literature review

Graduate Teaching Assistant- Human-Machine Interface, **University of Virginia,** Charlottesville, VA   *August 2022 - December 2022*
- Provided one-to-one assistance to a class of 64 undergraduates
- Graded 5 assignments, 1 exam, and 2 projects to deliver students feedback on writing and system design
- Collaborated with 2 professors and 4 other TAs to design material and communicate with students

Teaching Consultant- Full Stack Development, **Self-Employed @ Salesforce,** San Francisco, CA   *June 2022 - August 2022*
- Provided one-to-one feedback and mentorship for 24 underrepresented students

- Led lectures and demos in React.js, Postgres DB, Express.js, JavaScript and Git project management
- Developed example code and designed interactive in-class activities
- Facilitated ideation, system design, and development for 7 capstone web applications
- Collaborated with 2 co-instructors

Computer Science Tutor, **Self-Employed,** Blacksburg, VA   *September 2020 - May 2021*
- Data Structures and Algorithms (Java)
- Intro. to Computer Organization I & II (C)

Public Speaking Tutor, **VT Communications Lab,** Blacksburg, VA   *August 2019 - December 2019*

RESEARCH EXPERIENCE

Graduate Research Fellow, **Riggs Lab,** UVA graduate research   *August 2021 - Present*
- Conducted 4 cyber-physical systems studies with 60+ total human participants
- Produced academic writing for 3 publications and several works in progress
- Collaborated as sub-investigator on $50,000 funded grant proposal
- Obtained $159,000 NSF GRFP for "Towards Trustworthy Human-AI Teams: Understanding How to Integrate AI Coding Companions into Software Development Teams"
- Executed literature reviews and analyzed qualitative and quantitative data

Mechatronics Engineering Lead, **Pavlov's Desk,** UVA grant-funded side project   *October 2021 - May 2022*
- Led 4 engineers to build a Cyber-Physical System smart desk hutch funded by proposal for $1,000

Undergraduate Research Assistant, **Vinauger Lab,** VT for-credit research   *October 2020 - May 2021*
- Built animation software and provided technical support to biochemists

Engineering Lead, **Bike Broadcast,** VT-funded undergraduate research project   *July 2020 - December 2020*
- Led 2 engineers to build a wireless communication device for cyclists

PUBLICATIONS

- Nicholas Gardella, Joseph Shelton, Isabella Graßl, and Sara L. Riggs. 2025. HBCU Student Perspectives on Identity, Persistence, and Code-Generating AI in CS Education: A Case Study. In 25th Koli Calling International Conference on Computing Education Research (Koli Calling '25), November 11–16, 2025, Koli, Finland. ACM, New York, NY, USA, 12 pages. https://doi.org/10.1145/3769994.3770015
- Nicholas Gardella, Raymond Pettit, and Sara L. Riggs. 2024. Performance, Workload, Emotion, and Self-Efficacy of Novice Programmers Using AI Code Generation. In Proceedings of the 2024 on Innovation and Technology in Computer Science Education V. 1 (ITiCSE 2024). Association for Computing Machinery, New York, NY, USA, 290–296. https://doi.org/10.1145/3649217.3653615
- Nicholas Gardella and Sara L. Riggs. 2024. Establishing natural tactile mappings: Mapping tactile parameters to continuous data concepts. IEEE Transactions on Haptics (2024). Retrieved March 29, 2024 from https://ieeexplore.ieee.org/abstract/document/10417733/

UNDER REVIEW

- Nicholas Gardella, Matthew Bolton, and Sara L. Riggs. Relationships Between Trust, Compliance, and Performance for Novice Programmers Using AI Code Generation
- Claire Wood, Nicholas Gardella, and Ellis Barnes. Beyond Efficiency: A Critical Political Economy Perspective on AI Code Generators

WORK IN PROGRESS

- Nicholas Gardella and Sara L. Riggs. Novice Interactions with GitHub Copilot Under Time Pressure: An Experimental Qualitative Interview Study

PROFESSIONAL EXPERIENCE

Product Owner Intern, **Leidos,** Charlottesville, VA   *May 2021 - August 2021*
- Wrote an industrial whitepaper to market a cloud-based software infrastructure
- Scoped and tracked work spanning 250+ tasks and 4 large software development projects
- Conducted 3 Agile retrospectives and 15+ standups to streamline development processes
- Coordinated multiple developers to remove blockers

Firmware Engineering Co-Op, **Diebold-Nixdorf,** North Canton, OH   *January 2020 - May 2020*
- Planned and wrote a 47-page Co-Op orientation guide to accelerate future new hire productivity
- Implemented over a dozen custom features to a Java program to improve firmware development workflow
- Triaged over 70 automated firmware test failures in C# to help reach a project goal months ahead of schedule

Used Goods Merchant, **eBay,** Virtual   *August 2018 - Present*
- Sold 36 items with 100% positive feedback
- Priced items according to market behavior; negotiated with both buyers and sellers
- Distributed items with poor margins to combat waste and over-consumption of new retail goods

Lifeguard, **City of Charlottesville,** Charlottesville, VA   *July 2016 - August 2018*

VOLUNTEER EXPERIENCE

Capstone Mentor, **Charlottesville High School,** Charlottesville, Virginia   *September 2023 - May 2024*

Athletic Coach, **Personal Network,** Virtual   *August 2022 - Present*
- Coached running, triathlon, and strength training
- Leveraged intervals.icu to plan, distribute, and monitor athlete training programs
- Coached M33 to 1:38:45 10 mile run, M28 to 49:57 10K run, M27 to 1:55:55 Sprint triathlon, M36 to 2:55:33 Olympic triathlon
- Self-coached 4:53 mile run, 3:10:50 marathon run, 1:00:10 10 mile run, 35:12 10K, 2:26:06 Olympic triathlon

TECHNICAL SKILLS

- TypeScript & JavaScript for frontend web development in vanilla and React.js
- Python and R scripting for data cleaning, visualization, and analysis (single level, multilevel, and generalized linear models, parametric and non-parametric hypothesis testing)
- Docker for linux development, desktop applications, and DevOps
- Issue and product tracking with GitLab and GitHub
- C, C++, and Rust for ARM and x86 applications
- Object-oriented and multi-threaded programming in C#, Java, and C++
- Database design and management, specialties in Postgres and SQLite
- Computer networking, virtualization with VirtualBox and Proxmox, cloud administration with Oracle Cloud

ACADEMIC PROJECTS AND PRESENTATIONS

Presenter, **UVA Cyber-Physical Systems Link Lab,** Charlottesville, VA   *July 2025 - October 2025*
- Workshop Series: "Coding with GitHub Copilot"

Guest Lecturer, **UVA Systems & Information Engineering,** Charlottesville, VA   *September 2025*
- Invited lecturer for undergraduate "Programming for Information Engineering" course
- Lecture: "Using GitHub Copilot for Data Science in R"

Seminar Presenter, **Raspberry Pi Foundation,** Cambridge, England   *November 2024*
- Invited presenter for the Computing Education Research Seminar
- Paper: Performance, Workload, Emotion, and Self-Efficacy of Novice Programmers Using AI Code Generation

Podium Presenter, **2024 IEEE Haptics Symposium,** Long Beach, CA   *April 2024*
- Paper: Establishing natural tactile mappings: Mapping tactile parameters to continuous data concepts

Guest Presenter, **HooHacks 2023 Hackathon,** Charlottesville, VA   *March 2023*
- Workshop: How and Why to Communicate Requirements in Software Engineering

Presenter, **2022 NSF NRT PI Conference,** Blacksburg, VA   *October 2022*
- Poster: Generating Natural Mappings for Tactile Displays in Anesthesia Monitoring

Guest Presenter, **University of South Dakota,** Vermillion, SD   *April 2022*
- Presentation: Research in Tactile Psycho-physics

Member Presenter, **Human Factors and Erg. Society at UVA,** Charlottesville, VA   *May 2022*
- Workshop: A Semi-Technical Approach to Website Building

Presenter, **UVA Cyber-Physical Systems Link Lab,** Charlottesville, VA   *October 2021*
- Flash Talk: Generating Natural Mappings for Tactile Displays in Anesthesia Monitoring

LEADERSHIP

Webmaster, **Human Factors and Erg. Society at UVA,** Charlottesville, VA   *June 2022 - May 2023*

Mechatronics Engineering Lead, **Pavlov's Desk,** Charlottesville, VA   *August 2021 - May 2022*

Sound Body Coordinator, **ΣΦΕ,** Blacksburg, VA   *January 2021 - May 2021*

Vice President, **Naturally Sharp A Cappella,** Blacksburg, VA   *August 2020 - May 2021*

Engineering Lead, **Bike Broadcast,** Blacksburg, VA   *July 2020 - December 2020*

AWARDS

- NSF Graduate Research Fellow (UVA), Fa. 2023- Su. 2026
- NSF National Research Traineeship (UVA), Fa. 2022 - Su. 2023
- Link Lab Student Flash Talk Award (UVA), Fa. 2021
- UVA Distinguished Fellowship, Fa. 2021 - Su. 2022
- ΦBK, Sp. 2021- Present
- CS Research Consortium Merit Scholarship (VT), Sp. 2019 & Fa. 2019
- Norcott Award for Excellence in Literature (PVCC), Sp. 2018

CERTIFICATIONS

- Social and Behavioral Responsible Conduct of Research, CITI Program
- Certified Scrum Product Owner (CSPO), Cape Project Management