

CAITLIN E. JOHNSON

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EDUCATION

Washington University in St. Louis – St. Louis, MO

Expected May 2030

- Computer Science PhD student
- Relevant Coursework: Introduction to Machine Learning, Introduction to Graduate Research, Advanced Algorithms, Human in the Loop Computation, Rapid Prototype Development and Creative Programming
- Awards: Ann W. and Spencer T. Olin-Chancellor's Fellowship (OCF), offering a competitive award package and access to professional development opportunities

Amherst College – Amherst, MA

Graduated May 2025

- GPA: 3.96/4.00
- Computer Science major
- Relevant coursework: Introduction to Computing and the Arts, Thinking like a Computer Scientist (discrete mathematics), Artificial Intelligence, Computer Systems, Algorithms, Robotics I, Advanced Robotics, Data Mining, Mathematical Reasoning and Proof, Multivariable Calculus, Linear Algebra

Norfolk Academy – Norfolk, VA

Graduated May 2021

- GPA: 4.00/4.00, ACT: 35/36
- Awards: Cum Laude Society (Ranked in top 10% of class), High Honor Roll all 4 years, National Language Exam Awards (Latin and Spanish)

PROFESSIONAL EXPERIENCE

Human-Computer Interaction Research Assistant – Washington University in St. Louis

Aug. 2025 – Present

Advisor: Professor Eugene Vorobeychik

- Designed interactive visual interfaces and explainability techniques for AI-assisted peak detection workflows in collaboration with Waters Corporation
- Integrated uncertainty visualization methods to support human decision-making in analytical chemistry review tasks
- Conducted user-centered evaluation studies investigating explainability and cognitive workload in AI-assisted scientific analysis systems

Mathematics Department Grader – Amherst College

Sept. 2024 – May 2025

Mathematical Reasoning and Proof; Professor Kate Moore

- Graded problem set submissions and provided feedback to students weekly.

Artificial Intelligence Research Assistant – Washington University in St. Louis

May 2024 – Aug. 2024

Autonomous Driving Research Assistant; Professor Eugene Vorobeychik

- Won honorable mention prize for best research poster presentation in McKelvey School of Engineering REU symposium, with prizes available for only 6 out of 87 participants.
- Researched and developed reinforcement learning and convolutional neural network models for self-driving vehicles.
- Created custom 3D models of road networks and cities in RoadRunner and Unreal Engine for simulating and testing automated driving systems in CARLA simulator.

- Created datasets and trained LaneNet convolutional neural network architectures for lane detection.
- Used Python and various software and libraries, including CARLA Simulator, Unreal Engine, RoadRunner, PyTorch, NetworkX, OpenCV, Gymnasium, Albumentations, and others.

Artificial Intelligence Research Assistant – Amherst College

June 2023 – Aug. 2023

Deep Learning Research Assistant; Professor Scott Alfeld

- Researched, designed, and reported experiment results using deep learning algorithms, including multi-layer perceptrons, convolutional neural networks, and transformers.
- Conducted and presented research on current AI and machine learning technology (Voice cloning: Google's WaveNet and Microsoft's VALL-E; LLMs: LLaMA, Alpaca, GPT 4; 3D computer vision and recognition: Point-E, Deep3D, FaceNet; Art: Midjourney AI; others).
- Used Python and various libraries: PyTorch, TensorFlow, Matplotlib, NumPy, Seaborn, and others.

Computer Science Teaching Assistant – Amherst College

Feb. 2023 – May 2023

Lyle A. McGeoch Fellow for Computer Science; Professor Matteo Riondato

- Selected as a fellow for the McGeoch Fellowship in Amherst College's Computer Science and Algorithmic Thinking Fellows Program.
- Led office hours, assisted lab sessions, and answered student questions outside of class, lab, and office hours.
- Graded homework submissions and provided feedback to students weekly.

Economics Teaching Assistant – Amherst College

Sept. 2022 – May 2023

Microeconomics and Macroeconomics; Professor Tyler Porter

- Led office hours to tutor students weekly.
- Graded problem sets and provided feedback to students weekly.

EXTRACURRICULAR ACTIVITIES

The Indicator – Amherst College.

Feb. 2022 – May 2023

Senior Associate Editor and Graphic Designer

- Workshopped and copyedited writing submissions for the college's literary magazine.
- Created graphic design layouts for printed publications using Adobe InDesign daily.

Amherst Student Newspaper – Amherst College

Sept. 2021 – May 2023

Website (User Experience) Designer

- Managed the college newspaper's Instagram, Facebook, Twitter, and website using Figma as a collaborative software tool.
- Created website designs, graphic designs, and user interface designs with Figma daily.

Rings, Strings, & Other Things – Norfolk Academy

June 2020 – May 2021

Editor-in-Chief and Graphic Designer

- Selected and copy-edited student writing and art submissions for two literary magazine issues.
- Created graphic design layouts for two magazines using Adobe InDesign and led a group of students to organize literature and art-related events.

Engineering, Design, and Innovation Fellows – Norfolk Academy

Jan. 2018 – May 2021

Member and Mentor

- Collaborated with students to design and create 3D printed projects (via Ultimaker 3D software and printers) and other engineering-related projects.
- Designed, prototyped, and finished a table saw guard, a replica of a discontinued sprocket, chemistry models (atomic orbitals), a hydroponic garden, and videos to educate middle and high schoolers on essential technology (TI-84 calculators, Google and Microsoft software, and scientific data analysis software (Logger Pro)).

SKILLS & INTERESTS

- **Skills:** Python, Java, Assembly, C, Ultimaker 3D printing software, RoadRunner 3D modeling software, Unreal Engine, CARLA Simulator for autonomous driving, Adobe InDesign and Illustrator, Figma.
- **Interests:** Community involvement, graphic design, reading, writing, coding, 3D modeling.
- **Volunteer experience:** Brock Environmental Center (Chesapeake Bay sustainability and restoration initiative), teacher-assistance in underfunded Virginia Tidewater region elementary schools.