

Charlie Gagnon

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EDUCATION

Brown University

Sc.B. – Computer Science, *magna cum laude*

September 2018 - May 2022

Providence, RI

EXPERIENCE

MathWorks

Senior Associate Engineer

May 2024 - Present

- Working in the **MATLAB Coder Language** team, added [code generation](#) support for [MATLAB's .? operator](#), enhanced code motion optimizations to improve compatibility with [code profiling tools](#), and identified root causes for excessive memory use within code generation's definite assignment analysis.
- Leading the **DTA Support** team, coached team members to advance their technical knowledge and operational skills, optimized processes for knowledge sharing, and set priorities for team improvements.

MathWorks

Associate Engineer

July 2022 - May 2024

- Working in the **HDL Coder** team, implemented timing-slack calculations and multiple path analysis for [pre-synthesis critical path estimation](#) on hardware models designed in Simulink.
- Working in the **Deep Learning Coder** team, added IR constructs to represent tensor pooling operations, improving type safety and extensibility.
- As part of the **SIT Plan** team, authored and maintained internal training materials used by hundreds of new hires worldwide for learning about MathWorks server products and workflows.
- As part of the **DTA Support** team, provided direct support via email and phone to customers using [external language interfaces](#), [external hardware](#), and [server products](#).

MathWorks

Software Engineering Intern

May 2021 - September 2021

- Working in the **Cloud Platform** team, developed a log anomaly detection and remediation system for Kubernetes apps, coordinating Fluent Bit, Elasticsearch, and AWS Lambda to discard unhelpful log files.

National Park Service

Virtual Student Intern

September 2020 - May 2021

- Designed computer vision system to classify and count [colonial nesting birds in Biscayne National Park](#).
- Team of 3 selected as **Team Project of the Year, 2021**, from a pool of more than 3,000 interns.

Brown University

Teaching Assistant & Tutor

October 2019 - May 2022

- Within the **Computer Science Department**, guided students at weekly code and conceptual hours, responded to student questions on course forum pages, and revised assignments and solution code.
- As a **Sheridan Center** tutor, prepared and delivered weekly lessons for multiple groups of five students in introductory statistics, multivariable calculus, and physics.

SKILLS & SELECTED COURSEWORK

- C · C++ · Rust · Python · MATLAB · Verilog
- Compilers · Programming Languages
- Operating Systems · Networks · Architecture
- Machine Learning · Computer Vision · Graphics
- Complex Analysis · Abstract Algebra
- Modern Statistics (Information Theory, Learning Theory, Graphical Models)

ENGAGEMENT & AWARDS

Brown University Band

Vice President

Nov. 2019 - Nov. 2020

- Set performance schedule and prepared marching forms for [field and ice shows](#).

- Acted as primary contact between Brown Athletics and the Band.

National Merit Scholar

May 2018

MA Speech & Debate State Champion

Student Congress

April 2017