

# Charlie Gagnon

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## EDUCATION

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### Brown University

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

September 2018 - May 2022

Providence, RI

## EXPERIENCE

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### MathWorks

*Senior Associate Engineer*

December 2024 - Present

- Member of the **MATLAB Foundation Architecture** team, responsible for core C++ libraries and components used throughout the MATLAB language implementation, such as crash logging, multiprocess synchronization, and the multiple dispatch system that governs optimized C++ variants for thousands of built-in MATLAB functions.

### MathWorks

*Senior Associate Engineer in EDG*

July 2022 - December 2024

- Contributed to a range of products in the **code generation** area (MATLAB Coder, HDL Coder, Simulink Design Verifier, Deep Learning Coder), improving static analysis features and implementing new MATLAB syntax extensions.
- Authored the first prototype of a Simulink block for integrating **Rust** code with graphical programming models.
- **DTA Operations Lead**: coached more than 50 engineers in written and verbal communication, product knowledge, and technical problem solving; optimized knowledge-sharing processes; and redesigned team performance metrics. Advised customers on external languages, external hardware, app deployment, and parallel computing, via phone and email.
- **Product Training Team Lead**: designed and implemented a CI/CD system for training-course code and solutions, and authored internal training materials on server products, used by hundreds of new hires each year.
- Led **technical interviews** for more than 40 engineering applicants, evaluating work experience and programming skills.

### MathWorks

*Software Engineering Intern*

May 2021 - September 2021

- 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 a machine learning and 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

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\* graduate level, † teaching assistant

- **Languages**: C++, C, Rust, Python, MATLAB, Verilog, Java, Scala, Lisp, OCaml
- **Tools**: Git, Perforce, Kubernetes, Docker, NumPy, pandas, TensorFlow, Simulink, L<sup>A</sup>T<sub>E</sub>X, Vim, Emacs, Unix/Linux
- **Systems Courses**: Compilers, Programming Languages<sup>†</sup>, Operating Systems\*<sup>†</sup>, Networks, Architecture
- **Modeling Courses**: Machine Learning, Info. & Learning Theory\*, Comp. Statistics\*, Optimization\*, Vision, Graphics

## ENGAGEMENT & AWARDS

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### Brown University Band

*Vice President*

Nov. 2019 - Nov. 2020

- Set event schedule, prepared marching forms for field and ice shows, and represented the Band to Brown Athletics.

### National Merit Scholar

May 2018

### MA Speech & Debate State Champion

April 2017