

# Nathaniel MacArthur-Warner

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nathanielwarner.net

github.com/nathanielwarner

## EDUCATION

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**B.A. in Computer Science** **Carleton College - Northfield, MN** **Sept. 2016 - June 2020**

- Selected Courses: Algorithms, Data Structures, Software Design, Computer Graphics, Natural Language Processing, Computational Biology, Real Time Systems, Operating Systems, and Quantum Computing
- Senior Project: Leveraged TensorFlow to create a machine learning application for retrieval and summarization of source code, which outperformed competitive baseline models

## EMPLOYMENT

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**Full Stack Web Developer** **BalletNova Center for Dance - Remote** **Aug. 2020 - Sep. 2022**

- Designed and deployed new website ([balletnova.org](https://balletnova.org)) and back-office system using Django
- Improved accessibility, usability, and responsiveness for their customers
- Streamlined back-office operations through dialogue and iteration

**Full Stack Web Developer** **The Carletonian - Northfield, MN** **Jan. 2019 - June 2020**

- Designed and deployed new website ([thecarletonian.com](https://thecarletonian.com)) for the newspaper
- Developed WordPress theme and plugins, based on continuous dialogue with the rest of the organization
- Utilized AWS EC2, S3, Route 53, and CloudFlare to host the website, providing reliability at low cost

**Student Assistant Developer** **Carleton Web Services - Northfield, MN** **Sept. 2016 - March 2020**

- Full-stack development and testing of content management systems (Reason CMS and WordPress)
- Created SQL-based tools to migrate content from legacy CMS (Reason) to WordPress
- Worked with non-technical colleagues to establish requirements and ensure stakeholder satisfaction

**Software Engineer Intern** **Begley Research Group, UCSB - Goleta, CA** **June 2017 - Aug. 2017**

- Translated Mathematica-based materials-modeling software into MATLAB to allow the software to be utilized by corporations and government agencies that use MATLAB

## PROJECTS

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### FlightGear Photoscenery Implementation

- Contributed to the open-source FlightGear Flight Simulator (written in C++) to support photoscenery overlays, improving in-game realism: <https://github.com/nathanielwarner/flightgear-photoscenery>

### Transformer-based Code Completion and Summarization

- Designed and trained neural networks, using PyTorch and TensorFlow, for automatic completion and summarization of source code, based on the Universal Transformer architecture
- Created an interactive demonstration that allows users to try the models without downloading anything: [nathanielwarner.net/projects/code-completion-demo](https://nathanielwarner.net/projects/code-completion-demo)

## SKILLS

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### Programming Languages

- Proficient: Python (including Django), JavaScript (including Node and React), Java, PHP, C, C++, HTML, CSS
- Familiar: C#, Rust, Scheme

### Tools and Platforms

- AWS, GCP, Docker, Git, Linux, SQL, PyTorch, TensorFlow, Mathematica, MATLAB