Ashton Glover

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EDUCATION

Brown University | Providence, RI *Expected Graduation May 2026*

Sc.B. – Computer Science

Relevant Coursework: Object-Oriented Programming, Data Structures and Algorithms, Linear Algebra, Statistical Inference, Computer Systems, Computer Graphics, Discrete Structures and Probability, Deep Learning, Software Engineering, Computer Vision

SKILLS & TECHNICAL TOOLS

- **Familiar Languages:** Python, Java, JavaScript, TypeScript, C, C++, Swift, HTML/CSS
- **Frameworks:** React.js, Next.js, Three.js, TensorFlow, Spring Boot, Flask, OpenGL
- **IDEs / Platforms:** Xcode, QT Creator, IntelliJ IDEA, Visual Studio Code, Google Colab, GitHub, Docker, AWS, Microsoft 365

EXPERIENCE / LEADERSHIP

Full Stack @ Brown, *Developer* *Sept 2024 – Present*
- Working as a full stack developer for Full Stack @ Brown on web applications for Brown organizations and external businesses
- Currently working on a website for the Causality and Mind Lab at Brown

Hack @ Brown, *Dev Team* *Sept 2024 – Present*
- Working within a small team to build the website for Hack@Brown, the organization behind Brown University's hackathon
- Website will be React based with 3D graphics using Three.js and will be iteracted with by hackers around the country

Data Science Fellow, *Brown University Data Science Institute* *Sept 2024 – Present*
- Hired as a Data Science Fellow to work with Dr. Chris Horvat and the Antipodal Oceanography research group
- Building Jupyter Notebooks to run, visualize, and analyze compiled climate models
- Currently working on running CESM (Community Earth System Model) modules in Oscar, Brown University's high performance computing cluster, using Python and Bash scripting

Teaching Assistant, *Brown University Department of Computer Science* *Jan 2024 – May 2024*
- Served as a teaching assistant for CSCI 0111: Computer Foundations: Data under Professor Milda Zizyte
- Worked with students in office hours and lab sections on coding assignments in Pyret and Python

Teaching Assistant, *Brown University Department of Computer Science* *Aug 2023 – Dec 2023*
- Served as a teaching assistant for CSCI 0150: Introduction to Object-Oriented Programming and Computer Science
- Taught students fundamental OOP skills in Java through small, weekly labs that I led and held weekly office hours

Small Business Founder, *Topo Prints* *Aug 2022 – March 2023*
- Along with two Brown students, I helped found Topo Prints, a small company that custom-printed 3D topographical models of any location in the world using GIS data
- Worked heavily with CAD software, like Inventor, to create 3D models
- Dealt with customer acquisition by emailing and calling mountaineering and outdoor shops

PROJECTS

Clover High School Peer Mediation Website | React, TypeScript, Three.js, HTML/CSS, Firebase/Firestore, AWS, Java, Spring Boot
- Built a full stack website for the Clover High School Peer Mediation Club to act as a chat room between club members and students seeking help
- Implemented a TypeScript/React-based frontend hosted through AWS S3 with a Java Spring Boot backend deployed with AWS Elastic Beanstalk
- Utilized Firebase authentication with Firestore to store message history
- Created a separate login and dashboard page for club members so that they can view incoming messages and reply

AI Image Detector | TensorFlow, Python, Flask, NumPy, Matplotlib
- Created and trained a convolutional neural network model on 50,000 real images and 50,000 AI-generated images with the TensorFlow library to detect AI-generation in photo-realistic images
- Utilized pixel-wise feature extraction techniques such as ELA (Error Level Analysis) and PRNU (Photo Response Non-Uniformity) to preprocess the images
- Built a simple frontend with a Flask backend to allow users to upload images and see the trained model's prediction

Stock Predictor | TensorFlow, Python, pandas, Google Colab
- Implemented an LSTM-Based Sequential model to predict stock prices using the TensorFlow library and Yahoo! Finance data
- Built the program in Google Colab and used the Python papermill library to execute for each CSV in a designated dataset folder
- Utilized the pandas library to read the CSV and manipulate the data frame to feed to the model and used Matplotlib to generate graphs to evaluate the model's effectiveness

Ray Tracer | C++, Phong Illumination, Computer Graphics
- Built a ray tracing program in C++ to simulate light interacting with different primitive shapes in a scene
- Calculated phong illumination based on the normal calculations from the interaction between the ray and the object
- Included recursive ray tracing to simulate light bouncing off other objects to create shadows and reflections