

SPENCER KAROFSKY

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Summary

- Computer Science student at Northeastern University with a concentration in AI and large interest in robotics.
- Proven ability to lead projects, with a track record of improving algorithm reliability by 43-67%.
- Strong technical expertise in machine learning, computer vision, and AI-driven solutions.

Education

Northeastern University, Boston, MA
B.S. in Computer Science with Artificial Intelligence Concentration

Expected Graduation: June 2026
Cumulative GPA: 3.7

University of Vermont, Burlington, VT
Studied Computer Science and Pure Mathematics (August 2021 - May 2024)

Computer Science GPA: 3.7
Cumulative GPA: 3.5

Skills

- **Programming Languages:** Python, C++, Assembly
- **AI/ML:** TensorFlow & PyTorch, Scikit-Learn, Neural Networks, Computer Vision
- **Cloud Computing:** AWS (Lightsail, Lambda, API Gateway)
- **Other Tools:** NumPy, Pandas, Git, Matplotlib

Experience

Computer Vision Researcher, Northeastern University

January 2025-Present

- Developing a variational autoencoder-based architecture for 3D Gaussian Splatting to enhance the accuracy and efficiency of real-time 3D scene representation.

Computer Vision Intern, Wildlife Imaging Systems

May 2024-August 2024

- Constructed Monte Carlo Simulations to evaluate the efficacy of the Intrinsic Calibration pipeline.
- Enhanced OpenCV's `calibrateCamera` method to achieve 100% accuracy in high-focal-length scenarios, where the original method failed 30-40% of the time, improving the reliability of camera calibration procedures.
- Developed time-synchronization techniques, boosting 3D triangularization accuracy.

Undergraduate Research Assistant, University of Vermont

September 2023-May 2024

- Researched and developed machine learning solutions to predict and classify Rain on Snow (RoS) events.
- Developed and trained a Random Forest model, achieving 93% accuracy in classifying precipitation types.

Self-Directed and Group Projects

Robotic Arm Final Project

January 2025-Present

- Collaborating with a team of three graduate students to build a robotic arm for a Graduate Foundations of AI course, aimed at automating mundane tasks in everyday life.
- Applying reinforcement learning to enable the robot to perform tasks like picking up and passing objects.
- Leveraging computer vision and RL to allow the robot to learn new tasks from user demonstrations.

Computer Vision-Controlled Traffic Light

April 2023-November 2023

- Developed a smart traffic light system using Raspberry Pi and Python, adjusting light states based on real-time vehicle detection, aiming to reduce traffic congestion and wait times.
- Trained a CNN with TensorFlow to classify traffic signs, improving validation accuracy from 70% to 94% through architecture optimizations.
- Designed and implemented an algorithm to analyze and respond to vehicle traffic patterns, with future plans to integrate reinforcement learning for adaptive optimization of traffic light timing.