

# Kevin Siegall (They/Them)

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## EDUCATION

### Worcester Polytechnic Institute

B. S. Computer Science; B. S. Robotics Engineering

May 2025

Worcester, MA

- Relevant Classes: *Deep Learning For Perception, AI for Robotics, Swarm Intelligence, Software Engineering, Webware*  
*Unified Robotics: Actuation, Sensors, Manipulation, Navigation, Mobile & Ubiquitous Computing*

## WORK EXPERIENCE

### Smartapp.com – Robotics Branch

May 2024 – Aug 2024

#### *Autonomy Engineering Intern*

Worcester, MA

- Expanded on a Python and React-TS thrust test stand hosted on a Raspberry Pi, with customizable datalogging and test procedures
- Developed an intuitive and flexible motor library, which enables ‘hot-swapping’ of intelligent motor classes and objects
- Optimized proprietary robot locomotion techniques in Nvidia’s IsaacSim using deep reinforcement learning (PyTorch and PPO)

### OpenSTEM: Experiential Robotics Platform (XRP)

Aug 2022 – Present

#### *Lead Software Developer, XRPLib*

Worcester, MA

- Spearheaded the development of an open source MicroPython library for small robots built for classrooms that has 20k current users
- Managed a team of 1-5 over 2.5 years and communicated with corporate partners and engineers from Sparkfun and DEKA

### Jacobs Technology – Jacobs Software Engineering Center

May 2022 – Aug 2022

#### *Software Engineering Intern*

Hudson, NH

- Worked in Agile to develop an in-house C# application used to add and sort SQL filters on flightpath databases (DAFIF)

## PROJECTS

### Terrawarden Drone Cleanup – Major Qualifying Project

Aug 2024 – Present

- Designed and developed an aerial manipulator capable of detecting and collecting litter found on roadsides and highway medians
- Created a perception stack that uses an Intel RealSense to perform efficient (3ms) bounding box detection in open environments
- Evaluated YOLOv11 performance across multiple datasets, ultimately deciding to use a custom dataset generated using Blender

### Drone Racing Gate Semantic Segmentation

Aug 2024 – Oct 2024

- Used Blender to generate a dataset of 5000 images of drone racing gates for training a semantic segmentation model (U-Net)
- Applied various image augmentation techniques, such as gaussian blur and color jitter, to increase the robustness of the trained model

### Hand Machine: Gesture-Controlled Claw Machine

Jan 2025 - Jan 2025

- Designed, assembled, and programmed a hand-gesture controlled claw machine using spare 3D printer parts for GoatHACKs 2025
- Matched claw machine motion to user hand movements using an RGB camera feed as input for Google’s Hand Landmarker model

### Video Game AIs

Jan 2024 – Mar 2025

- Compared the relative abilities of an algorithmic model vs a reinforcement model at playing the classic NES game, Bomberman
  - Used both adversarial search and reinforcement learning, including Expecti-minimax and Approximate Q-Learning
- Implemented imitation learning on a Deep Q-Learning model in Pytorch, training it to play the Snake Game

### Robotic Navigation – SLAM and AMCL

Oct 2023 – Dec 2023

- Developed a robot that could autonomously navigate and map an unknown space, then localize itself when relocated at a later time
- Implemented Simultaneous Localization and Mapping (SLAM), AMCL, A\*, and Pure Pursuit on a Turtlebot3 with a planar LiDAR

## TECHNICAL SKILLS

|                 |   |
|-----------------|---|
| Languages       | Python, TypeScript, C#, Java, JavaScript, C++, C, MATLAB                            |
| Frameworks      | React.js, PyTorch, Arduino, MicroPython, IsaacSim, Unity Game Engine, PyGame        |
| Version Control | Git, Kanban, Agile, Github Projects, Azure DevOps, Jira                             |
| Other           | Blender, Nvidia Omniverse, Autodesk Inventor, Figma, Raspberry Pi, Microsoft Office |

## EXTRACURRICULARS

WPI Cooking Club, President

Apr 2023 - Present

WPI Robotics Prototyping Club, Founder, Treasurer

Aug 2024 - Present

WPI Rho Beta Epsilon, Alpha Chapter

Feb 2025 - Present

WPI Bowling Club, Treasurer

Aug 2022 – Feb 2023

WPI VexU, Software Co-Lead

Aug 2022 – Feb 2023

Scouting America, Troop 106, Eagle Scout

Mar 2014 – July 2021