James Underwood

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Education

Dartmouth College (BA, Computer Science) — Hanover, New Hampshire   *2023–2027*
- Relevant coursework in robotics, linear algebra, discrete math, software engineering
- GPA: 3.78

Skills & Proficiencies

HTML/CSS/JS, React, Python, Java, C, C++, MERN stack, LAMP stack, Git

Work Experience

Presidential Scholar, Reality and Robotics Lab at Dartmouth College   *2025*
- Researching underwater construction using autonomous underwater vehicles (AUVs), focusing on equipping AUVs to computationally simulate real-world water conditions with greater accuracy, as well as developing a construction planning algorithm to optimize the sequencing of block placement

Teaching Assistant, Dartmouth College   *2025*
- Helped students with class activities for CS 50 (Software Design and Implementation), covering topics including pointers, memory management, fuzzing, and debugging

Developer, Dartmouth Digital Applied Learning and Innovation Lab   *2024-25*
- Built software for an interactive kiosk displaying Dartmouth's energy sources and consumption for the Irving Institute for Energy and Society. *Technologies used: MERN stack, Render, D3.js*
- Built an IMU-based sensor device and web tool to monitor leg mobility of infants with hip dysplasia

Undergraduate research assistant, Johnson Bee Lab at Ohio State University   *2023-24*
- Helped develop a model to identify honey bees based on audio data *Technologies used: python (TensorFlow/Keras), convolution neural networks*
- Presented at Entomological Society of America meeting in spring 2025 on machine learning-based honeybee bioacoustics
- Completed varroa mite counts, larvae grafting, pollen sorting; maintained beehives

Publications

Hearon, L., Johnson, L., **Underwood, J.**, Lin, C.-H., & Johnson, R. (2025). buzzdetect: an open-source deep learning tool for automated bioacoustic pollinator monitoring. bioRxiv preprint. https://doi.org/10.1101/2025.06.13.659554

Honors & Awards

Ohio Student Journalist of the Year (Ohio Scholastic Media Association)   *2023*

Best Hardware Hack, Uncommon Hacks (University of Chicago hackathon)   *2021*

2nd place, Hack/IO (Ohio State University hackathon)   *2021*