

ISAAC VANDOR

Robotics Software Engineer

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EXPERIENCE

Woods Hole Oceanographic Institution

Engineer I – Engineer II

📅 July 2019 – Present

📍 Woods Hole, MA

- Lead software developer for National Deep Submergence Facility vehicles HOV Alvin, ROV JASON, and AUV Sentry
- Lead maintainer of the WHOIDSL codebase, in use by: WHOI, OET, UNH, UW-APL, MBARI, and others
- Mentored multiple junior and mid-career engineers on software development best practices, new software tools, and career growth opportunities
- Development of multiple new open-source ROS software drivers for common maritime tools and sensors
- Integrated inertial navigation algorithms for navigation solutions in use by HOV Alvin and ROV JASON
- Designed and built a simulation facility for testing new code developed for National Deep Submergence Facility assets
- Contributed to the development and testing of a new hybrid AUV/ROV vehicle with advanced terrain-relative navigation capabilities

Carnegie Robotics

Autonomous Systems Engineering Intern

📅 June 2018 – Sept. 2018

📍 Pittsburgh, PA

- Led new feature testing for US Army program of record autonomous mine detection and neutralization vehicle
- Developed remote logging capabilities & dashboard for data analytics
- Implemented improved UX and UI based on operator feedback

Naval Undersea Warfare Center - Division Newport

Tactical Unmanned Vehicle Systems Intern

📅 May 2017 – Sept 2017

📍 Newport, RI

- Created a payload autonomy module to convert between RECON & ROS message formats for REMUS vehicles
- Contributed to field testing of multiple R600 vehicles

PUBLICATIONS

👥 Conference Proceedings

- L. Lindzey, I. Vandor, T. Schneider, E. Gallimore, C. Kaiser, and M. Jakuba, "Coexploration for adaptive auv survey," in *2022 IEEE/OES Autonomous Underwater Vehicles Symposium (AUV)*, 2022, pp. 1–8. DOI: 10.1109/AUV53081.2022.9965837.
- I. Vandor, T. Lanagan, C. Kaiser, J. McGuire, and I. Vaughn, "Towards a seafloor passive acoustic geodetic marker for underwater surveying," in *Global Oceans 2020: Singapore – U.S. Gulf Coast*, 2020, pp. 1–5. DOI: 10.1109/IEEECONF38699.2020.9389135.
- D. Barrett, I. Vandor, and E. Kohler, "Applying structured light laser imaging to underwater obstacle avoidance and navigation," in *OCEANS 2018 MTS/IEEE Charleston*, 2018, pp. 1–6. DOI: 10.1109/OCEANS.2018.8604751.

EDUCATION

B.S. in Robotics Engineering

Olin College of Engineering

📅 Aug 2015 – June 2019

FIELDWORK

AUV Sentry

Lead software and data engineer

📅 Approx. 110 days/year

Responsible for sensor integration, software operations, data processing, and training of junior team members

ROV JASON

Lead software engineer and navigator

📅 Approx. 30 days/year

Responsible for sensor integration, software operations, and navigator training

CERTIFICATIONS

✈️ TWIC Card
2024

⚓ STCW
2022

🔗 Applications of AI for Anomaly Detection
2022

📖 Nanodegree, Deep Reinforcement Learning
2021

📄 Security Clearance
Details upon Request

SKILLS

C++ Python Git Linux tools LaTeX
Matlab ROS/ROS2 OpenCV Gazebo
Docker CI/CD PyTorch Keras
Embedded Programming

CAD tools 3D Printing Microcontrollers
Single-Board Computers Scrum MBSYSTEM
QPS Tools