

# Nathaniel Burgdorfer

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## Education

**Ph.D. in Computer Science**, Stevens Institute of Technology, *Hoboken, NJ* (Expected) 2025  
◦ **GPA** – 4.00

**M.Sc. in Machine Learning**, Stevens Institute of Technology, *Hoboken, NJ* 2020  
◦ **GPA** – 3.95

**B.Sc. in Computer Science**, Stevens Institute of Technology, *Hoboken, NJ* 2020  
◦ **GPA** – 3.87  
◦ **TA**: CS-392 Systems Programming, CS-511 Concurrent Programming, CS-284 Data Structures, CS-383 Computer Organization and Programming  
◦ **Upsilon Pi Epsilon**, Member of the International Honor Society for the Computing and Information Disciplines  
◦ **Honors**, Dean's List, Graduated with High Honors

## Professional Experience

**Software Engineer - Embedded Systems, L3Harris Technologies**, *Clifton, NJ* Jan 2021 – Aug 2021  
◦ Development of core radar systems capabilities. (C++)  
◦ VxWorks kernel modifications and development. (C++)  
◦ Implementation of embedded multicore capabilities. (C++)

**Software Engineering Intern - Masters, L3Harris Technologies**, *Clifton, NJ* Jun 2020 – Aug 2020  
◦ Development on embedded systems algorithms involving Radar technology and signal processing. (C++)  
◦ Integrating automation and data collection into existing unit tests for signal processing algorithms. (C++)

**Senior Design, Zebra Technologies**, *Hoboken, NJ* Sep 2019 – May 2020  
◦ Developing a real-time image recognition pipeline for shipping container detection and classification. (C++, Python, TensorFlow)  
◦ Developing a real-time 2D object pose estimation pipeline for shipping container CAD model alignment. (C++, Python)

**Software Developer, DexterityDB**, *Hoboken, NJ* Dec 2018 – Jun 2020  
◦ Developing parts of the company's core engine with a small team of systems developers (C++, Rust)  
◦ Implementing build and test servers utilizing docker containers and cloud services. (Python, Bash, GCP)  
◦ Enhancing and extending plugin features of the database engine. (C++)

## Research Interests

- Binocular and Multi-View Stereo
- Monocular Depth Estimation from Video
- Surface Reconstruction

## Publications

- Wang, W., Joshi, B., **Burgdorfer, N.**, Batsos, K., Quattrini Li, A., Mordohai, P., Rekleitis, I.. Real-Time Dense 3D Mapping of Underwater Environments. IEEE International Conference on Robotics and Automation (ICRA),

2023.

- Xanthidis, M., Joshi, B., Roznere, M., Wang, W., **Burgdorfer, N.**, Quattrini Li, A., Mordohai, P., Nelakuditi, S., and Rekleitis, I.. Towards Mapping of Underwater Structures by a Team of Autonomous Underwater Vehicles. International Symposium of Robotics Research (ISRR), 2022.
- Joshi, B., Xanthidis, M., Roznere, M., **Burgdorfer, N.**, Mordohai, P., Quattrini Li, A., and Rekleitis, I.. Underwater Exploration and Mapping. IEEE/OES Autonomous Underwater Vehicles Symposium (AUV), 2022.

## Teaching Assistantships

- |   |             |
|---|-------------|
| ○ CS 559 - Machine Learning (TA)                      | Spring 2023 |
| ○ CS 146 - Intro to Web Programming (TA)              | Fall 2022   |
| ○ CS 392 - Systems Programming (CA)                   | Spring 2020 |
| ○ CS 511 - Concurrent Programming (CA)                | Fall 2019   |
| ○ CS 284 - Data Structures (CA)                       | Spring 2019 |
| ○ CS 383 - Computer Organization and Programming (CA) | Fall 2018   |
| ○ CS 284 - Data Structures (CA)                       | Spring 2018 |

## Programming Languages & Libraries

- Python, PyTorch, C++, OpenCV, Open3D, C, TensorFlow