Dimitrios Chamzas

Senior Robotics Engineer
(U.S. Citizen)

EDUCATION

Northwestern University ➜

Sep. 2020 - Dec. 2021

MS in Robotics, GPA 3.95/4.0

University of Patras

Oct. 2013 - Oct. 2019

Diploma (Bs & Ms.) in Electrical and Computer Engineering

SKILLS

Programming Languages: C++, C, Python, Matlab, Bash, Java

Robotics Software: ROS, MoveIt, Gazebo, CoppeliaSim, URDF/Xacro

Robotics: Obstacle Avoidance, SLAM, Path Planning, Vision, Testing, Perception, CI/CD

Operating Systems: Linux, Android, Windows

Embedded Microcontrollers: Arduino, Raspberry Pi, PIC32, Teensy

Software Development: PyTorch, OpenCV, UNITY, Git, Cmake, unit testing

Interests: Sailing, Climbing, First Aid responder, Volunteer Firefighter, Water-Polo

PUBLICATIONS ➜ & AWARDS

3D Augmented Reality Tangible User Interface using Commodity Hardware, D. Chamzas, K. Moustakas, *GRAPP*, 2020,

cMinMax: A Fast Algorithm to Find the Corners of an N-dimensional Convex Polytope, D. Chamzas, C. Chamzas, K. Moustakas, *GRAPP*, 2021

1st place, Line Following Enhanced Robotex 2018, Tallinn Estonia

2nd place, Line Following Robotex 2017, Tallinn Estonia

1st place, Regatta Sail 2016,2017,2018,2019

OTHER

Professional Engineer License, Greece, 2020

First Aid Responder Diploma, Greece, 2016

LANGUAGES

Greek - Native, English - Fluent

Robotic Projects Portfolio: jimas95.github.io/portfolio

github.com/jimas95   chamzas95@gmail.com   (224)-659-3756

EXPERIENCE

Senior Robotics Software Engineer — Ocean Power Technologies ➜

Dec. 2023, Richmond CA

- MIT Collaboration: Enhanced autonomy with mission planning and swarm control.
- Developed marine collision avoidance using neural networks and stereo cameras.
- Implemented Docker-based CI/CD pipelines for automated testing and deployment.

Robotics Software Engineer — Robotic Research ➜

May. 2022, Clarksburg MD

- Design algorithms for ADAS with a focus on emergency braking and collision detection
- Authored a centralized data collection library in C++, addressing disk space issues

Robotics Software Engineer Intern — *Vecna Robotics* ➜

Jun. 2021 - Aug. 2021, Boston MA

- Integrated a new warehouse robot in gazebo simulation.
- Implemented perception and planning capabilities through URDF modeling
- Calculated the ground truth position using landmark detection and triangulation

Computer Vision Software Engineer Intern — *Irida Labs Center* ➜

Jun. 2017 - Sep. 2017, Patra Greece

- Worked on a monocular visual SLAM algorithm for navigation with OpenCV, C++

Robotics Software Engineer Member — Robotics Club *UPatras* ➜

Sep. 2016 - Jun 2019, Patra Greece

- Implemented maze solving, localization, sensors linearization, and communication algorithms in C for a high-speed miniature robot in a micro mouse competition
- Implemented a PID controller, and sensor calibration for a line following robot
- Wrote a Java simulator for emulating different mazes, sensors, and planning
- Developed visualization tools for online diagnostics and debugging.

PROJECTS

Mobile 3D Printer Construction Robot— *Python* ➜

- Designed a heating bed for disposable materials suited for 3D printing constructions
- Achieved robustness and repeatability of navigation for accurate printing
- Developed an automatic refueling procedure with a 4-DOF robotic arm

Mobile Manipulator (Sawyer & Ridgeback) — *Python/C++* ➜

- Deployed a mobile robot with Omni wheels that navigated between locations
- Opened drawer and performed a pick and place task with MoveIt
- Utilized RGBD cameras and lidar sensors for SLAM, collision, and object detection

Navigation Stack For TurtleBot3 — *C++*

- Implemented a landmark-based EKF-SLAM with unsupervised learning in ROS.
- Developed C++ libraries for differential drive kinematics, and unit ROS testing

Baxter Cup Stacking — *Python* ➜

- Led a team of 4 engineers to program a bimanual robot cup-stacking system
- Achieved successful stacking of up to 10 cups in 5 floors
- Combined MoveIt and April tags for collision-free manipulation and detection.
- Created a supporting Gazebo simulation for rapid development and debugging

Swarm Robotics Simulation — *Matlab* ➜

- Coded an optimal reciprocal collision avoidance algorithm
- Simulated over 50 robots in real-time utilizing parallel processing