

Lawrence J. Papincak

6480 Living Place, Pittsburgh, PA 15206 ▪ larry12193@gmail.com ▪ (412) 760 – 3454 ▪ lawrencepapincak.wordpress.com

FOCUS AREAS

Nuclear and Space Robotic Systems Development, Navigation and Control, Software and Electronics

EDUCATION

Carnegie Mellon University – Pittsburgh, PA

Masters of Science in Mechanical Engineering, Anticipated May 2018 – 3.87/4.0 GPA

Courses: Advanced Mobile Robot Development, Multivariable Robust Control, Advanced Control

System Integration, Simultaneous Localization and Mapping, Statistical Techniques in Robotics

Drexel University – Philadelphia, PA

Bachelor of Science in Mechanical Engineering, 2016 – *cum laude*, 3.67/4.0 GPA

EXPERIENCE

Research Assistant, Department of Energy Robotics Fellowship

Carnegie Mellon University, Field Robotics Center – Pittsburgh, PA

- Successfully deployed first of its kind, autonomous inspection system for decommissioning uranium enrichment facilities
 - Lead ROS/C++ developer for system operations, safeguarding, and state estimation
 - Head of sensor characterization and calibration, achieving sensor accuracy through environmental testing and probabilistic modeling
- Developing an underwater autonomous system, leveraging state-of-the-art SLAM to improve inventorying and inspection of spent nuclear fuel pools
- Head software developer for borehole-deployable 3D mapping robot in response to nuclear containment emergency

Teleoperation Lead and Avionics Developer

Carnegie Mellon University, Lunar XPrize – Pittsburgh, PA

- Achieving faster and safer teleoperation of rover through improved pixel transmission algorithms and advanced machine learning techniques (GANs)
- Developing next generation of rover single-board computer and firmware
- Investigating surface reconstruction of landing site using monocular SfM techniques

Launch Intern, Range and Communications

SpaceX – Vandenberg AFB, CA and Cape Canaveral, FL

- Upgraded launch site communication and telemetry systems for Falcon Heavy
- Streamlined site wide emergency alert system for better integration to launch control

Vice President, Communication Systems Lead

Icarus Interstellar, Drexel University Chapter – Philadelphia, PA

- Developed communication systems for interstellar spacecraft destined for Alpha Centauri

Senior Design Project, Controls and Electrical Lead

Drexel University Chapter – Philadelphia, PA

- Prototyped electronics and software systems for CubeSat docking mechanism

Electromechanical Intern

Penn State University, ARL Navigation R&D Lab – Warminster, PA

- Electronics and embedded software support for ground based navigation system

SKILLS

C, C++, C#, Matlab/Simulink, Python, ROS

AutoCAD, Altium, COMSOL, CREO, EagleCAD, SolidWorks

Hand tools, Basic CNC work, Lathe, Mill, Reflow Oven, SMD, Hand Soldering

PUBLICATIONS

Papincak, Lawrence, et al. *Robotic Measurement of Holdup Deposit Volume in Gaseous Diffusion Piping to Quantify U-235 Content*. Waste Management Conference 2018. (Under review)

Hsiung, Jerry, Andrew Tallaksen, Lawrence Papincak, et al. *Localized Imaging and Mapping for Underwater Fuel Storage Basins*. Waste Management Conference 2018. (Under review)