

# Paul Sammut

ROBOTICS ENGINEER

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## Summary

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Paul is a robotics engineer that has worked on underwater rockets, has started a consumer product hardware company and a robotics consulting company making marine research robots. He was born with a passion for anything with wires, software, and moving parts. He has over a decade of experience building many combinations of those three things. These projects have taken him on a never-ending learning journey spanning designing ROS autonomous systems, real-time control, embedded electronics, mechatronics, and software/hardware project management.

## Education

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### Stevens Institute of Technology

BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING (AEROSPACE CONCENTRATION)

Hoboken, NJ

May, 2009

### Stevens Institute of Technology

MASTER OF ENGINEERING IN MECHANICAL ENGINEERING (ROBOTICS CONCENTRATION)

Hoboken, NJ

May, 2014

## Work Experience

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### Stocker Freight

FOUNDER

New York, NY

2017 - 2018

- Raised FF seed round and founded Stocker, dedicated to creating an autonomous freight service for cities.
- Built a tech-demo street robot name Primo using ROS capable of operating autonomously in the street.
- Integrated RTAB-Map appearance based SLAM to create PCL maps and localize within them.
- Wrote ROS code integrating multiple stereo cams, mono cams, IMU and other sensors to provide odometry fused with an EKF.
- Created a simulation environment with fully defined URDF and custom sim nodes for HIL and SIL testing in Gazebo

### Robotics Consulting | Rockefeller University

ROBOTICS ENGINEER

New York, NY

2016 - 2017

- Acquired, managed and executed a robotics contract to create an autonomous catamaran for dolphin vocalization research.
- Integrated IMU, GPS, Cameras, Motor Controllers, Long Range RF Telemetry and Control, LiFePo4 Battery System, and wrote Mission Control software for autonomous operation.
- Created a publisher-subscribers software framework using the Actor Framework allowing for node-like processes.

### Ramos Alarm Clock | Sammut Tech LLC

FOUNDER

Hoboken, NJ

2012 - 2016

- Invented a novel alarm clock that forced users up by use of a remote keypad.
- Created a successful Kickstarter and pre-order campaign raising \$200K in pre-orders.
- Setup a factory in New Jersey, managed 2 engineers and labor hires to manufacture product.
- Managed capital acquisitions, supply chain, manufacturing plans, inventory forecast schedules, and product strategy.

### Davidson Lab | Stevens Institute of Technology

SENIOR RESEARCH ENGINEER

Hoboken, NJ

2009 - Present

- Managed new technology projects from the specification phase to testing and validation.
- Conducted fundamental physics research on High Speed Supercavitating Vehicles (underwater rockets).
- Created instrumentation and control apparatus utilizing various sensors, pneumatic systems, still and video photography systems interfaced to separate RTOS and standard computers on a custom distributed network.
- Operated, maintained, and upgraded a fleet of UUVs operating in the Hudson River.
- Created HIL testing apparatus utilizing mathematical models to validate system performance.
- Designed electronic wiring systems for power, analog and digital comms and connector solutions.
- Wrote and supported mission critical launch control software for rocket systems.
- Designed and managed the creation of a control surface subsystem with humming bird level dynamic response.

- Machined parts based on provided drawings and learned fundamental concepts of Design For Manufacture

## **Publications**

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|------|---|-----------------------|
| 2012 | <b>Planing-Hull Forces and Moments on a Cylindrical Body in a Cavity</b> , CAV2012            | <i>Singapore</i>      |
| 2010 | <b>Remote Control and Monitoring of MOOS Vehicles through Cellular Modems</b> , MIT MOOS-DAWG | <i>Cambridge, MA</i>  |
| 2010 | <b>Guidance of a UUV Using a Passive Acoustic Threat Detection System</b> , IEEE, WSS         | <i>Carrara, Italy</i> |

## **Skills**

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|-------------------|---|
| <b>Software</b>   | C, C++, Python, ROS, OpenCV, PCL2, Real Time Programming, Linux, CMake, Vim Enthusiast, VCS (Git, SVN), Mixed Signal DAQ Programming, LabVIEW, LabVIEW RT, LabVIEW FPGA, cRIO   |
| <b>Hardware</b>   | PCB Layout (Altium, Eagle), MPLAB IDE, Logic Analyzers, ICE Debuggers, Digital-comms (CAN, Serial, I <sup>2</sup> C, SPI), RF SoCs, uProcs, Power Circuits, Sensors (LiDARs, GNSS, IMUs, AHRS, 2D Cameras, Stereo Cameras, RGBD Cameras), HIL Testing |
| <b>Mechanical</b> | Solidworks (16 years exp.), Fusion 360, Complex Tolerance Stacks, Underwater Systems, Precision Actuation Design (Ball screws, Linear Rails), Materials and Coatings  |
| <b>Personal</b>   | US Security Clearance, USA and Maltese Citizen, Avid Rockclimber  |