Paul **Sammut**

Senior Robotics Engineer

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Summary

Cross-functional engineer that has worked on automotive IoT edge software at AWS, robotic perception systems for micro-mobility scooters at Uber, designed electro-mechanical subsystems for underwater rockets, designed and manufactured consumer electronics hardware and started a robotics company. I was born with a passion for anything with hardware, software, and moving parts and have over a decade of experience building combinations of those 3 things.

Work Experience

AWS

Las Vegas NV (Remote)

Software Development Engineer — *Nov 2020 - Present*

- Wrote Cloud configurable edge software that runs in vehicles and collects customer defined data for OEMs.
- Designed Cloud/Edge systems that handle bi-directional communication to vehicles. Control/Data plane.
- Designed a simulation system that creates virtual vehicles and runs automated Cloud/Edge E2E tests.

Uber

San Francisco, CA

Senior Mechatronics Engineer - NeMo (NewMobility) Robotics — *August 2019 - June 2020*

- Oversaw a JDM project with a Taiwanese hardware CRM to produce an Android based 360 degree camera system mounted on a micromobility scooter from Concept to Production.
- Wrote embedded firmware in C for safety critical scooter system.
- Handled cross-functional QA on EE design, hardware/mechanical change requests.
- Mentored junior team members and aided them in owning design projects and establishing priorities.
- Owned a power and digital interface PCB to serve as an electrical bridge between vehicle and camera.
- Designed a 5 discreet antenna solution for Wifi MIMO, GPS, LTE MIMO that was housed in a micromobility scooter.
- Designed a cellular modem solution for a high speed Cat-4 LTE connection on a micromobility vehicle with simplified compliance, time-to-market, and speed as primary design criteria.
- Successfully served as interim team EM of a 4 person mechatronics group during month-long absence of EM.

Ouster Inc.

San Francisco, CA

Software Engineer - LiDAR Sensors and Deployments — *June 2019 - August 2019*

- Worked on FleetGuide, a LiDAR based sensor suite for trucks to provide drivers with better spatial awareness. Link.
- Wrote automated provisioning and test code for fleet of ruggedized Linux based LiDAR systems mounted to garbage trucks.
- Solved design issues with deployed sensor systems on fleets of trucks, ranging from water ingress to creating fault handling/reaction systems on ruggedized truck mounted Linux boxes.
- Conducted data analysis for fleet health monitoring to aid in scaling up fleet using the ELK stack, Big Query and Tableou.

Stocker Freight

New York, NY

Founder — *2017 - 2018*

- Raised seed round and founded Stocker, dedicated to creating an autonomous freight service for cities. Link.
- Built a tech-demo street robot name Primo using ROS capable of operating autonomously in the street. Link.
- Integrated RTAB-Map appearance based SLAM to create PCL maps and localize within them. Link.
- Wrote optimized multi-threaded C++ ROS code that processed data coming from multiple sensors and controlled the robot to operate autonomously. Link.
- Created a simulation environment with fully defined URDF and custom sim nodes for HIL and SIL testing in Gazebo.

Robotics Consulting | Rockefeller University

New York, NY

Robotics Engineer — *2016 - 2017*

- Acquired and managed a robotics contract to create an autonomous catamaran for dolphin vocalization research. Link.
- 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. Link.

Ramos Alarm Clock | Sammut Tech LLC *Hoboken, NJ*

Founder *2012 - 2016*

- Invented a novel alarm clock that forced users out of bed by use of a remote keypad. Took idea from concept to prototype to shipped hardware product. Link.
- Created a successful Kickstarter and pre-order campaign raising $250K in pre-orders and successfully shipped a consumer electronics hardware product.
- 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.
- Designed PCBA and wrote firmware for 16bit uProc based hardware product.

Davidson Lab | Stevens Institute of Technology *Hoboken, NJ*

Senior Research Engineer *2009 - May 2019*

- Managed new high-performance technology projects from the specification phase to testing and validation.
- Conducted fundamental physics research on High Speed Supercavitating Vehicles (underwater rockets).
- Wrote and supported mission critical launch control software for rocket systems.
- 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.
- Designed thousands of mechanical parts and assemblies in CAD for fabrication utilizing numerous materials, in complex tolerance stack-ups in electro-mechcanical and pneumatic and subsea applications.
- Wrote HIL testing software utilizing mathematical models to validate system performance.
- Designed electronic wiring systems for power, analog and digital comms and connector solutions.
- Designed and managed the creation of a rocket control surface subsystem with humming bird level dynamic response.
- Operated, maintained, and upgraded a fleet of UUVs operating in the Hudson River.

Institute Machine Shop | Stevens Institute of Technology *Hoboken, NJ*

Machine Shop Apprentice *2007 - 2009*

- Machined parts based on provided drawings and learned fundamental concepts of making parts for customers.

Publications

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

Skills

Software	C, C++, Python, ROS, OpenCV, PCL2, Real Time Programming, Linux, CMake, Vim Enthusiast, VCS (Git, SVN), Airtable, Mixed Signal DAQ Programming, LabVIEW, LabVIEW RT, LabVIEW FPGA, cRIO
Hardware	PCB Layout (Altium, Eagle), MPLAB IDE, Logic Analyzers, ICE Debuggers, Digital-comms (CAN, Serial, I^2C, SPI), RF SoCs, uProcs, Power Circuits, Sensors (LiDARs, GNSS, IMUs, AHRS, 2D Cameras, Stereo Cameras, RGBD Cameras), HIL Testing
Mechanical	CAD Solidworks (since 2003), Fusion 360, Finite Element Analysis (FEA), Thermal Analysis, Complex Tolerance Stacks with GD&T, Underwater Systems Design, Precision Actuator Design (Ballscrews, Linear Rails), Materials and Coatings
Personal	Previous US Security Clearance, USA and Maltese Citizen, Avid Rockclimber

Education

Stevens Institute of Technology *Hoboken, NJ*

Bachelor of Engineering in Mechanical Engineering (Aerospace Concentration) *May. 2009*

Stevens Institute of Technology *Hoboken, NJ*

Master of Engineering in Mechanical Engineering (Robotics Concentration) *May. 2014*