Paul **Sammut**

Senior Robotics Engineer

San Francisco, CA

646-421-5751 | paul.c.sammut@gmail.com | paulsammut.com | paulsammut | paul-sammut

Summary

Robotics engineer that has worked on robotic perception systems for micro-mobility scooters, 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

Uber

San Francisco, CA

Senior Mechatronics Engineer - NeMo Robotics

August 2019 - Present

- Oversaw a JDM project with a Taiwanese hardware CRM to produce an Android based 360 degree camera system mounted on a micromobility scooter. Provided QA on design and handled hardware/mechanical change requests.
- Designed mechanical IP68 environmental sealing system with 3 discreet electronics enclosure chambers and 6 electrical passthroughs.
- Created an assembly cell to facilitate final assembly of hardware units with overhead torque controlled fastener drivers and automated labeling and barcode scan based asset/QA tracking.
- Designed in CAD assembly fixtures for fabrication and assembly operations of scooters.
- Designed a 5 discreet antenna solution for Wifi MIMO, GPS, LTE MIMO that was housed in a micromobility scooter and requested custom antenna post processing from Taoglas for environmental protection.
- Identified the need for a hardware tracking database and created an Airtable Base along with a suite of client side software in python and LabVIEW that automatically tracked production gates, firmware/software updates, QA inspections and updated Airtable via REST API.
- Specified a power and digital comms interface PCB to serve as an electrical bridge between vehicle and camera. Wrote all firmware in C for the MCU.
- 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 5 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 awereness.
- 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.
- Wrote automated provisioning and test code for fleet of ruggedized Linux based LiDAR systems mounted to garbage trucks.
- Conducted data analysis for basic fleet health monitoring 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 ROS code integrating stereo cams, mono cams, IMU, and wheel encoders to provide odometry fused with an EKF. 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. Link.
- Created a successful Kickstarter and pre-order campaign raising $250K 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 *Hoboken, NJ*

Senior Research Engineer *2009 - May 2019*

- Managed new technology projects from the specification phase to testing and validation.
- Conducted fundamental physics research on High Speed Supercavitating Vehicles (underwater rockets).
- Designed many hundreds of mechanical parts and assemblies in CAD for fabrication utilizing numerous materials, in complex tolerence stackups in electromechcanical and pneumatic and subsea applications.
- 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 rocket control surface subsystem with humming bird level dynamic response.

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 Design For Manufacture

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

Mechanical CAD Solidworks (since 2003), Fusion 360, Finite Element Analysis (FEA), Thermal Analysis, Complex Tolerance Stacks with GT&T, Underwater Systems Design, Precision Actuation Design (Ballscrews, Linear Rails), Materials and Coatings

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

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*