GABRIELLE MERRITT

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Summary: Technical professional, dedicated problem solver, and life-long learner excited by robotics and massively distributed systems. Proven track record of success in both operational and technical aspects of early-stage start-ups.

PROFESSIONAL SKILLS

Programing Languages: Scala, Python, Java, C++, C, Bash, MATLAB, Excel
Software Frameworks and Technologies: Spring Boot, Docker, Gradle, Kubernetes, ArgoCD, Jenkins, OpenAPI, AWS, ROS, Redis, PostGres, MongoDB, Kafka | **Hardware Skills:** Solidworks, Eagle PCB, Altium PCB, Manual Lathe, Drill Press, CNC

PROFESSIONAL EXPERIENCE

Strateos, Menlo Park, CA   July 2016 – Present
Enabling rapid drug discovery via life science laboratory automation (more info)
Member of Technical Staff / Senior Software Engineer
- Designed, built, and maintained a platform for designing and automating experiments
- Designed and built production software for completely automating a drug discovery facility for Eli Lilly
  - Integrated various scientific devices with our platform
  - Execution Planning: constraint modeling software that breaks down experiments into ordered tasks
  - Developed a microservice to manage and deploy software to devices
- Present semi-annual lunch and learns about the automation platform for the entire company
- Designed and implemented novel modeling to optimize experiment execution through proprietary "scheduling"/automation software using constraint solving
- Oversaw the transition from supporting automation of small biotech experiments (<10 samples) to being able to run 1000's of samples
- Modernized platform software from a single monolithic application to micro service-based architecture

GRASP Lab (Modlab), Philadelphia, PA   June 2012 – June 2016
General Robotics, Automation, Sensing & Perception Lab
Student Robotics Researcher
- Designed mechanical, electrical and software systems for 4 modular robotic systems
- Published Design of a Hybrid Exploration Robot for Air and Land Deployment (H.E.R.A.L.D) for Urban Search and Rescue. In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS),* Chicago, Illinois, Sept 2014
- Notable Projects
  - **Smores (Self-assembling Modular Robot for Extreme Shapeshifting)** (August 2014 – June 2016)
    - Designing and developing system architecture and embedded software for self-assembling modular robots
    - Managing testing and integration for modules to ensure module reliability
    - Developing and ensuring wireless communication between modules
  - **DARPA Tactical Expandable Marine Platform (TEMP)**
    - Worked on Defense Advanced Research Projects Agency (DARPA) funded government contract (grant of $600,000 total) to construct 100 fully autonomous boats which lock together to form different structures

Open Source Robotics Foundation, Mountain View, CA   Feb 2014 – June 2014
Embedded Systems Intern
- Designed and developed electrical system for a tactile sensing robotic hand
- Wrote embedded software compatible with the Robotic Operating System software
- Designed and fabricated custom microcontroller and firmware for Right Hand Robotic's Reflex Alpha
- Fabricated and tested high power motor drivers and embedded devices for Sandia National Laboratory's STEPPR robot

EDUCATION

University of Pennsylvania, Philadelphia, PA   May 2016
Master of Science in Engineering, Robotics.
Bachelor of Science in Engineering, Mechanical Engineering and Applied Mechanics.   May 2013

PORTFOLIO HIGHLIGHTS

Trajectory Planner for off the shelf quadrotor
• Used ARDrone SDK to write a position controller and trajectory planner for off the shelf Bebop Drone
Android Quadrotor
• Created an Andriod app for flying ModLab's low cost quadrotor platform

- Controlled yaw pitch and roll using the phones accelerometer and gyroscope

Wildfire Prediction

- Used Machine learning techniques to predict probability of a wildfire in a given county in California on a given day.

Robockey

- Created 3 fully autonomous robots which were able to maneuver field and shoot hockey puck with team of 3.
- Fully programmed robots in C using Nintendo Wii