

# John Michael Burke

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## EXPERIENCE

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### Swift Navigation

San Francisco, CA

*Senior Corrections Estimation Software Engineer*

*Sept 2022 - Current*

- **Automation:** Significantly enhanced the company's replay framework, reducing end-to-end replay runtime by over 50%, and developed an automated regression testing framework (nightly/weekly jobs, plots, reports) that demonstrably reduced pre-production degradations; created data analysis tools using Polars for efficient processing of terabytes of data.
- **Modeling:** Streamlined model candidate selection by enhancing the tuning and evaluation framework with the modeling team; provided critical production L3 on-call support, investigated production issues, and drove significant performance improvements through compiler optimizations and resource reallocation.

*Senior Developer Infrastructure Software Engineer*

*Nov 2020 - Sept 2022*

- **Swift Toolbox:** Spearheaded the development of the open-source Swift Toolbox, rewriting the majority of the legacy Python application in Rust with a QML frontend, and implemented the CI/CD pipeline for automated testing and deployment of signed installers across Linux, macOS, and Windows. [Github Link](#)

### Bossanova Robotics, Inc.

Mountain View, CA

*Software Engineer*

*Sept 2018 - Oct 2020*

- **Data Systems & Automation:** Developed a scalable collectd framework for robot fleet data collection. Created an ETL pipeline (Elasticsearch) for monitoring/analysis, and an Apache Airflow pipeline for automated data extraction and cloud upload.
- **Testing & Deployment:** Co-developed an OpenHTF-based testing framework for contract manufacturer. Used Ansible for test station deployments.

### Google X (Everyday Robot)

Mountain View, CA

*Reliability Technician with Adecco*

*Sept 2016 - Sept 2018*

- **VR Scene Editor:** Developed tool using PyBullet physics engine for quickly setting up virtual environments which robots can interact with and perform learning experiments.
- **QA & Data Collection:** Performed QA on production software releases and wrote scripts for monitoring hardware related issues. Monitored and ran evaluations on a series of data collection robots for the Learning Team.
- **Acknowledgements:**
  - \* *Multi-Task Domain Adaptation for Deep Learning of Instance Grasping from Simulation.* [Stanford Link](#)
  - \* *Using Simulation and Domain Adaptation to Improve Efficiency of Deep Robotic Grasping.* [Arxiv Link](#)
  - \* *End-to-End Learning of Semantic Grasping.* [Arxiv Link](#)

### Blue River Technology

Sunnyvale, CA

*Developer Operations Engineer*

*Sept 2015 - Feb 2016*

- **Data Monitoring:** Provided real-time data analysis and operator support for lettuce thinning machines. Debugged hardware issues.

### Seebright, Inc.

Santa Cruz, CA

*Computer Vision Intern*

*Apr 2014 - Sept 2014*

- **OpenCV:** Implemented OpenCV algorithms for tracking a handheld remote; integrated 3D pose as a cursor in iOS/Unity AR applications.

## EDUCATION

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### Georgia Institute of Technology

*Masters of Science in Computer Science; ML Concentration GPA: 4.00*

*Jan 2019 - May 2022*

### University of California, Santa Cruz

*Bachelor of Science in Robotics Engineering; GPA: 3.04*

*Sept 2012 - May 2015*

## PROJECTS

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**Supervised Learning Report:** Analysis of the performance of ML algorithms for the classification of two datasets.

**Eye Tracking Autism for Mobile:** Designed a novice prototype detector for Autism in infants using a gaze tracking algorithm deployed to an Nvidia Jetson.

**Mechatronics Robot Project:** Designed a robot to move through the course, avoiding obstacles and shooting ping pong balls at enemies. [Team Website](#)

## RELEVANT SKILLS

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Rust Python C++ Polars Plotly Jenkins Github Actions Grafana Prometheus Bazel CMake  
Docker SQL R Elastic Ansible Airflow SkLearn Bash OpenCV Javascript React