# Elena Petrova

SENIOR ROBOTICS SOFTWARE ENGINEER

San Francisco, CA (415) 555-0187 elena.petrova@email.com linkedin.com/in/elenapetrova

## Summary

Senior Robotics Software Engineer with 8 years building localization, perception and navigation software for sidewalk delivery robots and autonomous forklifts. Writes production C++ and Python, designs SLAM and sensor fusion pipelines for embedded GPUs, and mentors engineers on concurrency, testing and CI/CD. Has shipped software to 1,500 robots in 4 countries.

## Skills

- **C++**
- **Python**
- **Localization**
- **SLAM**
- **Sensor Fusion**
- **Perception**
- **Navigation**
- **Concurrency**
- **ROS**
- **CI/CD**

## Experience

**Senior Robotics Software Engineer** 05/2022 - Present

Golden Gate Autonomy San Francisco, CA

*Autonomous forklift company with robots in 60 distribution centers.*

- Lead localization and SLAM for **700** autonomous forklifts, holding 99.95% localization uptime across 60 sites.
- Design a LiDAR and camera sensor fusion pipeline in C++ that cut perception latency from 120 ms to 45 ms.
- Rebuild navigation planning around lock-free concurrency, raising pallet moves per hour by 12%.
- Mentor 5 engineers and own CI/CD for the autonomy repository, cutting release time from 2 weeks to 3 days.

**Robotics Software Engineer** 07/2018 - 04/2022

Mission Bay Robotics San Francisco, CA

*Sidewalk delivery robot startup operating in the US, UK, Estonia and Finland.*

- Built perception for pedestrians and curbs with Python training pipelines and C++ inference on 800 robots.
- Developed localization algorithms fusing GPS, IMU and wheel odometry, reaching 10 cm accuracy downtown.
- Wrote ROS data structures and algorithms for map storage, shrinking map size by 70%.
- Supported launches in 4 countries, triaging 200 field logs a month with operations.

**Graduate Student Researcher** 09/2016 - 05/2018

University of Michigan Ann Arbor, MI

*Autonomous vehicle lab working on mapping and localization.*

- Developed a particle filter for localization against prior maps, cutting position error by 35%.
- Built Python tools to align 40 LiDAR and camera datasets for 12 lab members.
- Implemented multi-threaded C++ point cloud filters that ran 4 times faster than the old code.

## Education

**Master of Science** 05/2018

University of Michigan Ann Arbor, MI

Computer Science