

TY TREMBLAY

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Education

Worcester Polytechnic Institute

Master of Science in Robotics Engineering

Worcester, MA

Aug. 2011 – May 2013

Worcester Polytechnic Institute

Bachelor of Science in Robotics Engineering

Worcester, MA

Aug. 2007 – May 2011

Experience

Manager, Software Engineering

Sept. 2023 – Present

Realtime Robotics

Boston, MA

- Built Resolver, a cloud-based web application that reduces multi-robot path planning from days to minutes, developing proof of concept in 2 months and scaling it to become company's core product
- Manage team of 3 engineers while developing across full stack (Next.js, API Gateway, AWS CDK, Lambda, DynamoDB) with serverless architecture supporting unlimited concurrent optimization runs
- Researched and implemented company-wide experimentation platform (Statsig), securing startup program acceptance and deploying feature flags, A/B testing, and metrics infrastructure across all products
- Lead technical recruiting and hiring while advising on product direction, system architecture, and design decisions for robotics optimization platform

Staff Software Engineer

Oct. 2021 – Sept. 2023

Realtime Robotics

Boston, MA

- Migrated codebase to Nx monorepo architecture and led optimization of RapidPlan UI/UX, improving development workflow and user experience for core robotics planning product
- Re-architected and optimized 3D visualization pipeline for complex robot path planning, enhancing performance and visual clarity for multi-robot simulations
- Spearheaded migration from ROS to WebSocket-based pub-sub architecture, modernizing real-time communication between robotics systems and web interface

Principal Applications Engineer

Feb. 2019 – Oct. 2021

Realtime Robotics

Boston, MA

- Proposed concept for Resolver (now company's core product) within 2 weeks of starting, while leading product-market fit efforts for real-time collision avoidance technology
- Traveled globally to work with early adopters across NA, EU, and APAC, gathering customer feedback and translating requirements into engineering roadmap and product features
- Built applications team from 1 to 6+ engineers while collaborating with commercial team to develop pitch materials that improved customer understanding of value proposition
- Served as bridge between customers and engineering teams, driving product direction based on real-world deployment challenges and user needs

Senior Software Engineer

Sep. 2016 – Feb. 2019

Symbotic

Wilmington, MA

- Led team of 3 engineers developing React/Redux frontend with C# REST API backend to automate commissioning of robotic warehouse systems using robots as sensors and test executors
- Designed and architected full-stack application that streamlined deployment of multi-robot warehouse automation systems across customer sites
- Developed neural network models to predict robot maintenance needs based on error patterns and sensor data, enabling proactive system optimization

Field Systems Engineer

Jun. 2015 – Sep. 2016

Symbotic

Wilmington, MA

- Deployed and tested complex robotic warehouse systems across 5 North American locations, developing monitoring software to automate log analysis

Manufacturing Test Engineer II

Aug. 2013 – Jun. 2015

Symbotic

Wilmington, MA

- Developed automated testing software and processes for robot manufacturing, designing test fixtures to improve reliability and reduce assembly time

Projects

QR Scout | *TypeScript, React, Vite, Tailwind CSS*

2022 - Present

- Built comprehensive QR code-based scouting platform used by 170+ FRC teams worldwide, featuring configurable forms, real-time data collection, and statistical analysis
- QR Scout was used to submit over 950,000 scouting forms in 2025
- Architected flexible JSON-driven form system supporting 8+ input types (text, number, select, multi-select, boolean, timer, image) with dynamic validation and reset behaviors
- Implemented offline-first PWA with QR code generation/scanning, CSV export, and responsive design optimized for tablets and mobile devices in competition environments

Technical Skills

Languages: JavaScript, TypeScript, Python, SQL, HTML/CSS, C#, Java

Frameworks: React, Node.js, Next.js, React Router, React Three Fiber

Developer Tools: Git, Docker, AWS, VS Code, Cursor, Claude Code

Libraries: Tailwind CSS, Shadcn UI, Three.js, Zustand, React Query, React Hook Form, React Hooks, React Icons, React Three Fiber

Databases & AI/ML: PostgreSQL, MySQL, Supabase

Leadership / Extracurricular

Red Hawk Robotics

2021 – Present

Mentor

FIRST Robotics

- Build the team from a bottom quartile team to a top 50 team in the world in 2 years
- Inspired students and mentors to raise over \$90,000 in donations to the team annually