

Grigoriy Dubrovskiy

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PROFESSIONAL SUMMARY

Robotics, Software and Control Systems Engineer with 6+ years of applied experience in autonomous driving, mobile robotics and motion planning in industrial and academic settings.

EXPERIENCE

Motional (formerly Aptiv, until March 2020)

Boston, MA → Philadelphia, PA

Senior Software Engineer – Motion Planning – Trajectory Scoring and Selection

August 2022 – present

- At first 100% Individual Contributor, later 50% time Tech Lead and 50% Individual Contributor
- Implemented Trajectory Scoring and Selection for a Safety Subsystem
- Implemented Trajectory Correction to account for a newer Vehicle Pose, to account for the delay to generate a trajectory
- Optimized resource utilization (manually and automatically monitoring latencies, and apply fixes, CPU and memory usage, etc)
- As a module owner reviewed performance weekly of the deployed software and created follow-up tickets as needed
- Worked across teams on submodule designs (creating and reviewing; breaking down designs into actionable steps with timelines)
- Created Quarterly Plans and Retros for a team, provided weekly updates on OKRs to other teams and Directors
- QSR (quality software reviewer) designation (every MR needs to have a QSR approval)
- Drafted job descriptions and conducted interviews

Senior Software Engineer – Embedded Software Team

April 2021 – August 2022

- Implemented sensor readers in C++14 for POSIX systems, reading data over Ethernet and CAN (radars and cameras)
- Worked with ECUs (Aurix TC397, TC399): programming in C99, flashing, debugging
- Served as software/implementation POC for Functional Safety (ASIL) and CyberSecurity compliance

Software Engineer III

August 2019 – March 2021

- Implemented Safety Subsystem's components, running on RTOS (QNX)
- Implemented sensor readers, reading data over Ethernet, CAN, proprietary communication protocols (e.g. radar reader)
- Software packaging with Conan (simplifying inter-dependencies between sub-projects, debugging packaging, CI, build process)
- Served as a Release Manager for a Safety Subsystem
- Implemented visualization tools with Qt/QML and OpenSceneGraph for visualizing data captured by AVs

Aptiv

Pittsburgh, PA

Autonomous Driving Systems Engineer – Test & Verification

January 2018 – July 2019

- Developed scripts in Python & Bash for connecting to autonomous vehicles and storage units for transmitting and processing data
- Implemented algorithms in C++/Python/Bash for transmitting and saving data on Autonomous Vehicles in different formats
- Significantly improved Software delivery and Conan packaging processes for several C++ subsystems
- Participated in code peer-reviewing in a large team, legacy code maintenance, interviewing and training new engineers

UNIVERSITY OF NOTRE DAME

Notre Dame, IN

Graduate Research Assistant

July 2015 – January 2018

- Developed algorithms in C&C++ for drones (Autoquad M4, AQ6) for flying missions and for ground robots (Pioneer 3AT, 3DX)
- Developed algorithms in C++ in Linux environment for Optimized Integrated Task and Motion Planning (used MILP and SMT)
- Implemented autonomous navigation system in C++ with formally proven collision avoidance in unknown and dynamic environments (for Omron Pioneer robots)
- Developed primitive actions (e.g. "Pick Up an object") in C++ for a ground robot, using a web camera for color recognition
- Prototyped algorithms with Sampling-based Motion Planning approaches (e.g. RRT), using Open Motion Planning Library

CERTIFICATIONS

- DDS Training from RTI (Data Model, Architecture, QoS, Configuring Transports, Keys, Instances, etc) March 2022
- QNX Training (Architecture, Process & Thread Synchronization, IPC, Boot Image generation, profiling, etc) March 2020
- [MICROSAR Safe](#) (Functional Safety, Memory Protection, Program Flow Control, Safe E2E, SafeRTE) November 2020
- [MICROSAR CyberSecurity](#) (Basics of Cryptography, AutoSAR Crypto Stack, Secure OnBoard Comms, HSM) December 2020

EDUCATION

UNIVERSITY OF NOTRE DAME

Notre Dame, IN

Master of Science in Electrical Engineering

January 2018

- Research Area: Autonomous Task and Motion Planning for Mobile Robots

SAINT PETERSBURG ELECTROTECHNICAL UNIVERSITY (SPb ETU)

Saint Petersburg, Russia

Master of Science in Control Systems (Automation and Control of Industrial Complexes and Mobile Objects)

July 2015

TECHNICAL SKILLS

Development Skills (~ in years): C++14/C++20 (6y), C (7y), Git (8y), Linux/Ubuntu (8y), Docker (6y), QNX (0.5y), CMake (3y), Conan (1.5y), Python (3y), Bash (6y), Jenkins (3y), AppImage (2y), SQL, MATLAB (6y), Qt (1y), CPLEX/C++ (1y), Z3/C++ (0.5y), ROS/C++ (3y), OpenCV, MoveIt!, OMPL, PLC (2y), Altium Designer (0.5y), CAD, HTML, 3D printing