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 Team August 2022 – present

- Tech Lead for Trajectory Scoring and Selection
- 50+% time as individual contributor (e.g. implemented Trajectory Selector of a Safety Subsystem, Trajectory Correction, etc)
- As a sub-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
- Optimized resource utilization (measuring and improving latencies manually and automatically, CPU and memory usage, etc)

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