Grigoriy Dubrovskiy

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PROFESSIONAL SUMMARY

Robotics, Software and Control Systems Engineer with 5+ years of applied experience in mobile robotics, autonomous driving, machine learning and motion planning in industrial and academic settings.

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
- Classic AUTOSAR Training (OS, SW Components, I/O, Comm, State Management, Sys. Services, NV Mem, Diag.) July 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

EXPERIENCE

Motional (formerly Aptiv, until March 2020) **Boston, MA → Philadelphia, PA**
Senior Software Engineer April 2021 - present

- Implemented sensor readers in C++14 for POSIX systems, reading data over Ethernet, CAN (radar, camera)
- Worked with ECUs (Aurix TC397, TC399): programming in C99, flashing, debugging
- In-house Classic AutoSAR semi-expert (design, quote and implement the original prototype with MICROSAR)
- Software/implementation point of contact for Functional Safety (ASIL) and CyberSecurity compliance

Software Engineer III August 2019 – March 2021

- Implemented Safety Subsystem components, running on RTOS
- 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, as a side duty
- 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

- Significantly improved Software delivery and Conan packaging processes for several C++ subsystems, as a side project
- Improved Continuous Development process, by root-causing regressions and software failures in corner cases
- Implemented algorithms in C++/Python/Bash for transmitting and saving data on Autonomous Vehicles in different formats
- Performed various data processing in C++/Python/Bash
- Developed scripts in Python & Bash for connecting to autonomous vehicles and storage units for transmitting and processing data
- 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
- Implemented APIs for a 7 DoF manipulator (Cyton Gamma 1500) and implemented few demos (e.g. picking up an object)
- Prototyped algorithms with Sampling-based Motion Planning approaches (e.g. RRT), using Open Motion Planning Library

INFINEON TECHNOLOGIES AUSTRIA AG **Villach, Austria**
Engineer January 2015 – July 2015

- Designed Control Systems for low voltage power converters (simulations performed in Cadence Virtuoso, VerilogA and Matlab)

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
Bachelor of Science in Engineering and Technology (Automation and Control) July 2013

TECHNICAL SKILLS

Development Skills (~ in years): **C++14** (5y), **C** (7y) **Linux/Ubuntu** (6y), **QNX** (0.5y), **CMake** (3y), **Conan** (1.5y), **Python** (3y), **Bash** (6y), **Docker** (3y), **Jenkins** (3y), **AppImage** (2y), **Git** (6y), **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

Language Skills: Russian (Native), Kazakh (Beginner), Polish (Beginner)