Olzhas Adiyatov

olzhas.adi@gmail.com • olzhas-adiyatov • olzhas
youtube, google scholar

Skills

Programming Languages: C++17, C, MATLAB, JavaScript, TypeScript, WebGL, GLSL, CUDA, Python
Libraries/Frameworks: OpenCV, OMPL, DART, ROS, Gazebo, Eigen
Tools: gdb, Docker, CMake, vcpkg, git, GitHub actions
OS: GNU/Linux (**Ubuntu/Debian**, Gentoo, CentOS, Rocky Linux), Windows
Others: BeagleBone Black, Raspberry Pi, LaTeX, Solidworks, MathCAD

Experience

Software Developer — **Kitchener, ON**
Christie Digital, — *09/2022 – Current*
- Led the development of light interaction simulation software utilizing JS/TS, React, C++, and CUDA.
- Modernized the continuous integration and deployment pipeline with CMake and GitHub Actions, streamlining build processes.
- Boosted data upload speeds by nearly 4x in the JavaScript/TypeScript codebase, optimizing performance and user experience.
- Enhanced the reliability of projection mapping software by implementing Digital Image Processing algorithms in C++.
- Managed and mentored co-op students in full-stack development and computer graphics projects, contributing to their professional growth and project success.

Graduate Researcher (Grad. Research Studentship) — **Waterloo, ON**
Autonomous Systems Lab, UWaterloo, — *09/2018 – 08/2022*
- Developed a path planning software package for navigating uneven terrain for an industry partner, in C++ using ROS.

Research Assistant — **Astana, Kazakhstan**
ARMS Lab, Nazarbayev University — *11/2015 – 06/2018*
- Conducted extensive research in motion planning and model predictive control, culminating in multiple publications in peer-reviewed journals and conferences.
- Mentored and guided junior researchers in advanced software development techniques using C, C++, and GNU/Linux, enhancing their programming skills and project contributions.

Mechatronics Engineering Intern — **Shenzhen, China**
Makeblock Co., Ltd — *06/2016 – 07/2016*
- Enhanced the control strategy of a self-balancing robot constructed from the Makeblock robot kit, leading to improved stability and performance.

Visiting Researcher — **Singapore**
Dynamics and Control Laboratory, SUTD — *07/2015 – 10/2015*
- Implemented a real-time Discrete-time Proportional-Derivative (PD) controller in C++ for Raspberry Pi, ensuring precise and responsive system control.
- Developed an EMG acquisition and post-processing utility in MATLAB for Bitalino data, enabling comprehensive analysis for conference paper publication.

Undergraduate Researcher — **Astana, Kazakhstan**
ARMS Lab, Nazarbayev University — *06/2012 – 07/2015*
- Created a MATLAB Sampling-based path/motion planning toolbox, enabling obstacle-free robot movement, available for download on GitHub.

Teaching

University of Waterloo — **Waterloo, ON, Canada**
Teaching Assistant — *09/2018 – 05/2022*
- Led tutorial sessions explaining course problem solutions for Digital Control Applications course (ECE484) - Fall 2019
- Assisted lab sessions of Analog Control Systems course (ECE380) - Winter 2019, Winter 2022
- Assisted lab sessions of Autonomous Mobile Robots course (MTE544) - Fall 2018, Winter 2020

Nazarbayev University — **Astana, Kazakhstan**
Teaching Assistant — *08/2016 – 05/2018*
- Provided support for Digital Image Processing and Embedded Systems courses.
- Played a key role in developing the curriculum for the Robot Motion Planning course, aiding students with OMPL and DART.

Education

University of Waterloo — **Waterloo, ON, Canada**
MASc in Electrical and Computer Engineering, GPA: 86.8/100 — *2018–2022*

Nazarbayev University — **Astana, Kazakhstan**
MSc in Robotics, GPA: 3.93/4.0 — *2016–2018*

Nazarbayev University — **Astana, Kazakhstan**
BSc in Robotics and Mechatronics, GPA: 3.76/4.0 — *2011–2015*
Graduation Project: SafeSpace project: Path/motion planning for industrial manipulator in the presence of dynamic obstacles.