Olzhas Adiyatov

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https://www.youtube.com/user/OlzhasAdi/videos

Education

University of Waterloo	**Waterloo, ON, Canada**
PhD in Electrical and Computer Engineering	*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.

Experience

Advanced Robotics and Mechatronics Systems (ARMS) Laboratory

Nazarbayev University	**Astana, Kazakhstan**
Research Assistant	*Nov 2015–Present*

- Research in motion planning
- Assistance in software development (C/C++, GNU/Linux)

Makeblock Co., Ltd	**Shenzhen, China**
Intern	*Jun 2016–Jul 2016*

- Worked on an improvement of control strategy of a self balancing robot assembled from parts of the Makeblock robot construction kit.

Dynamics and Control Laboratory

Singapore University of Technology and Design	**Singapore**
Visiting Researcher	*Jul 2015–Oct 2015*

- Implemented real-time PD controller in C++ for Raspberry Pi
- Wrote EMG acquisition and post-processing utility based on Bitalino in MATLAB

Advanced Robotics and Mechatronics Systems (ARMS) Laboratory

Nazarbayev University	**Astana, Kazakhstan**
Undergraduate Researcher	*Jun 2012–Jul 2015*

- Developed MATLAB Sampling-based path/motion planning toolbox (https://goo.gl/I4k2T6)

Teaching

Department of Robotics, Nazarbayev University	**Astana, Kazakhstan**
Teaching Assistant	*Jan 2017–Current*

- Assisted with Digital Image Processing, Embedded Systems courses

Department of Robotics, Nazarbayev University	**Astana, Kazakhstan**
Teaching Practicum	*Aug 2016–Nov 2016*

- Contributed to the development of the Robot Motion Planning course and helped students with the installation of Open Motion Planning Library.

Department of Robotics, Nazarbayev University	**Astana, Kazakhstan**
Undergraduate Teaching Volunteer	*Fall 2013*

- Assisted Laboratory sessions on Electrical Circuits I.

Professional service

IEEE Transactions on Robotics	
Peer Reviewer	*Fall 2016*
IEEE International Conference on Advanced Intelligent Mechatronics	
Peer Reviewer	*Spring 2017*
IEEE/RSJ International Conference on Intelligent Robots and Systems	
Peer Reviewer	*Spring 2017*
Springer Journal of Intelligent & Robotic Systems	
Peer Reviewer	*Fall 2017*

Publications

[1] **O. Adiyatov** and H. A. Varol, "Rapidly-exploring random tree based memory efficient motion planning," in *2013 IEEE International Conference on Mechatronics and Automation (ICMA)*, pp. 354–359, 2013.

[2] D. Braun, S. Apte, **O. Adiyatov**, A. Dahiya, and N. Hogan, "Compliant actuation for energy efficient impedance modulation," in *2016 IEEE International Conference on Robotics and Automation (ICRA)*, pp. 636–641, IEEE, 2016.

[3] **O. Adiyatov**, K. Sultanov, O. Zhumabek, and H. A. Varol, "Sparse tree heuristics for rrt* family motion planners," in *Advanced Intelligent Mechatronics (AIM), 2017 IEEE International Conference on*, pp. 1447–1452, IEEE, 2017.

[4] B. Nurimbetov, **O. Adiyatov**, S. Yeleu, and H. A. Varol, "Motion planning for hybrid uavs in dense urban environments," in *Advanced Intelligent Mechatronics (AIM), 2017 IEEE International Conference on*, pp. 1627–1632, IEEE, 2017.

[5] **O. Adiyatov** and H. A. Varol, "A novel RRT*-based algorithm for motion planning in dynamic environments," in *Mechatronics and Automation (ICMA), 2017 IEEE International Conference on*, pp. 1416–1421, IEEE, 2017.

[6] A. Zhakatayev, B. Rakhim, **O. Adiyatov**, A. Baimyshev, and H. A. Varol, "Successive linearization based model predictive control of variable stiffness actuated robots," in *Advanced Intelligent Mechatronics (AIM), 2017 IEEE International Conference on*, pp. 1774–1779, IEEE, 2017.

Technical skills

Programming: C, C++11, OMPL (Open Motion Planning Library), MATLAB/Simulink, DART (Dynamic Animation and Robotics Toolkit), Eigen, CMake, Qt Creator, gdb, git, Python, Assembly Languages (Intel and Microchip PIC)

Computer Aided Design: SolidWorks, EAGLE, Altium Designer

Operating Systems: GNU/Linux (Ubuntu/Debian, CentOS, Gentoo), Windows

Others: ROS, 3D Printing (Objet Connex260, Up 3D printer, MakerBot Replicator 2X), PCB Prototyping (LPKF), BeagleBone Black, Raspberry Pi, Mechanical and Electrical Workshop Machines and Tools, LaTeX, MathCAD

Languages

English: Fluent (TOEFL iBT: 105)

Russian & Kazakh: Native

Scholarships and Awards

Ministry of Education of Republic of Kazakhstan Scholarship for Master's degree 2016-2018: Covered tuition fee

Internships in China's Innovative Enterprises:
1 month internship in Makeblock Ltd. Shenzhen, China
funded by Shakhmardan Yessenov Science and Education foundation covered accommodation expenses and daily allowances

Ministry of Education of Republic of Kazakhstan Scholarship for Bachelor degree 2010-2015: Covered tuition fees and accommodations expenses

Extracurricular activities

Korean Club, Nazarbayev University   **Astana**
President   *Apr 2011–Nov 2014*

References

- Huseyin Atakan Varol, PhD, *Department Chair, Nazarbayev University*   ahvarol@nu.edu.kz
- Vassilios D. Tourassis, PhD, *Dean, Nazarbayev University*   vassilios.tourassis@nu.edu.kz
- Altay Zhakatayev MSc, *Instructor, Nazarbayev University*   azhakatayev@nu.edu.kz
- Peter Li, *Overseas Marketing Manager, MakeBlock*   peter@makeblock.com