Berk Altın

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Experience

University of California   **Santa Cruz, CA**
Postdoctoral Researcher, Department of Electrical and Computer Engineering   *Aug. 2016–present*
- Developed path planning algorithm implemented on UGV and UAV controlled via OptiTrack, MATLAB, ROS
- Mentored undergraduate students to award-nominated paper on trajectory optimization and control for UGVs and UAVS
- Led industrial collaboration to develop predictive and adaptive controllers for power systems and renewable energy sources
- Developed breakthrough methods for model predictive control of switched and hybrid systems, organized international IEEE workshop to present research findings with collaborators from Air Force Research Laboratory and France
- Headed project on robust hybrid control for safety-critical UAVs/UGVs with hardware/computational limitations, represented team at NSF principal investigator meetings

University of Michigan   **Ann Arbor, MI**
Research Assistant, Department of Mechanical Engineering   *Oct. 2011–June 2016*
- Authored 11 papers published in top journals and presented at international conferences by IEEE, ASME, and IFAC
- Conducted statistical optimization case study for US Army showing 17–26% drop in ground vehicle fleet operating costs
- Managed team to develop sensing and learning algorithms for motion control and 3D printing systems, experimentally verified up to 80% increase in accuracy in collaboration with researchers from University of Notre Dame and the Netherlands
- Made mechanical/electrical modifications and implemented algorithms on Arduino and embedded software for rehabilitation device in Human Biomechanics and Control Laboratory, ran trials and analyzed data for clinical research

Sabancı University   **Istanbul, Turkey**
Undergraduate Researcher, Department of Mechatronics Engineering   *Apr. 2010–Apr. 2011*
- Implemented motion controller and disturbance observer on laser micromachining workstation using Simulink/dSPACE
- Researched cell injection techniques and piezo actuator models for bilateral control of microscale biological applications

Hungarian Academy of Sciences   **Budapest, Hungary**
Intern, Systems and Control Laboratory   *July 2010–Aug. 2010*
- Created algorithms and implemented in C# for peripheral vision-based force feedback in telemanipulation system

Kale Aerospace   **Istanbul, Turkey**
Intern, Manufacturing and CAD/CAM   *July 2009*
- Revised technical drawings, optimized the allocation of workpieces on unworked steel plates to minimize waste material

Education

University of Michigan   **Ann Arbor, MI**
Ph.D. and M.S. in Electrical Engineering, M.S. in Mathematics, Fulbright Fellow   *Sep. 2011–June 2016*

Sabancı University   **Istanbul, Turkey**
B.S. in Mechatronics Engineering, Minor Honors in Mathematics   *Sep. 2007–June 2011*

Technical Skills

- **Techniques**   Model predictive control, optimal control, hybrid and nonlinear control, iterative learning, multivariable linear control, adaptive control, industrial control, state estimation, system identification
- **Applications**   Robotics, autonomous vehicles, power systems, mechatronics, manufacturing, biomechanics
- **Computer**   C++, MATLAB/Simulink, dSPACE, Arduino IDE, C#, Visual Basic .NET, LabView, PIC assembly, ladder logic, PSpice, Xilinx ISE, CATIA
- **Languages**   Turkish (Native), English (Bilingual proficiency), French (Intermediate)

Other

- **Volunteering** Organized social gatherings (Turkish Student Association, Ann Arbor, 2012-2013), organized community projects for underprivileged youth (Robert College Alumni Association, Istanbul, 2007-2011)
- **Personal Interests** Horseback riding (2009 Istanbul champion), water polo (2004 Turkish 2nd Division champion), music (piano, guitar, drums), snowboarding