

Graduate Research (PhD)**Sep 2014 – Dec 2019**

Human Machine Interaction (HMI) Laboratory, Sabancı University, Turkey

- Design, analysis and implementation of shoulder-elbow, gait and leg exoskeletons
- Development of user friendly, interactive, human-in-the-loop, passivity-based control methods that are compatible with state-of-art rehabilitation protocols
- Development of robot assisted assessment methods that are used in robotic rehabilitation

Graduate Research (Masters)**Sep 2011 – Sep 2013**

Human Machine Interaction (HMI) Laboratory, Sabancı University, Turkey

- Design, analysis and implementation of shoulder-elbow exoskeleton, ASSISTON-SE: design, production and implementation of cable based actuated, 12 DoF active rehabilitation device for stroked patients or patients who lost upper extremity body functions
- Design, analysis, and implementation of delta robot, 3DOF spherical wrist mechanism, triangular-circular (3RRP) planar parallel mechanism, series elastic actuator based on negative stiffness property of buckling beams, knee exoskeleton based on Schmidt coupling.
- Design, analysis, and implementation of 3DOF holonomic platform equipped with compliant 3DoF force sensing module for table-top physical rehabilitation and haptic research

Teaching Assistantship**Feb 2011 – Feb 2017**

- Teaching assistantship of courses: engineering mechanics, system design and control, ergonomics, manufacturing processes, kinematics & dynamics, robotics, industrial control

Summer Intern**June 2010 – Sep 2010**

Mälardalen University (MDH), Västerås, Sweden

- Calibration of hand-eye stereo camera and control of 6 DOF series manipulator in Intelligent Human-Robot Interaction (I-HRI) project

Undergraduate Research**June 2008 – June 2011**

Graduation Project, Sabancı University, Turkey

- Design, Analysis, Implementation of parallel manipulators as delta robot, agile-eye mechanism and triangular-circular (3RRP) planar mechanism

Solar Powered Car (SuSolar), Sabancı University, Turkey

- Construction of solar powered car for TUBITAK Formula-G 2008 solar car race

PUBLICATIONS

Ozan Ozdenizci, Mustafa Yalcin, Ahmetcan Erdogan, Volkan Patoglu, Moritz Grosse-Wentrup, Mujdat Cetin, "*Electroencephalographic Identifiers of Motor Adaptation Learning*", Journal of Neural Engineering, April 2017

Ozan Ozdenizci, Mustafa Yalcin, Ahmetcan Erdogan, Volkan Patoglu, Moritz Grosse-Wentrup, Mujdat Cetin, "*Correlations of Motor Adaptation Learning and Modulation of Resting-State Sensorimotor EEG Activity*", Institute of Neural Engineering, April 2017

Ozan Ozdenizci, Mustafa Yalcin, Ahmetcan Erdogan, Volkan Patoglu, Moritz Grosse-Wentrup, Mujdat Cetin, "Pre-movement Contralateral EEG Low Beta Power Is Modulated with Motor Adaptation Learning", IEEE International Conference on Acoustics, Speech and Signal Processing, March 2017

Wisdom Agboh, Mustafa Yalcin, Volkan Patoglu, "A Six Degrees of Freedom Haptic Interface", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2016), Deajeon, Korea, 2016

Ozan Ozdenizci, Mustafa Yalcin, Ahmetcan Erdogan, Volkan Patoglu, Moritz Grosse-Wentrup, Mujdat Cetin, "Resting-state EEG Correlates of Motor Learning Performance in a Force-Field Adaptation Task", 24th Signal Processing and Communication Application Conference (SIU), Zonguldak, Turkey, 2016

Hammad Munawar, Mustafa Yalcin, Volkan Patoglu, "Redundant Kinematics and Workspace Centering Control of AssistOn-Gait Overground Gait and Balance Trainer", IEEE International Conference on Robotics and Automation (ICRA 2016), Stockholm, Sweden, 2016

Hammad Munawar, Mustafa Yalcin, Volkan Patoglu, "Motion Control of a Kinetically Redundant Overground Device", Türkiye Robotbilim Konferansı (TORK 2016), Istanbul, Turkey, 2016

Hammad Munawar, Mustafa Yalcin, Volkan Patoglu, "AssistOn-Gait: An Overground Gait Trainer with an Active Pelvis-Hip Exoskeleton", International Conference on Rehabilitation Robotics (ICORR 2015), Singapore, Singapore, 2015

Mustafa Yalcin, Mine Saraç, Volkan Patoglu, "Üst Ekstremité Fiziksel Rehabilitasyonu için Seri Elastik Holonomik Gezin Robot", Türkiye Otonom Robotlar Konferansı (TORK 2015), Istanbul, Turkey, 2015

Hammad Munawar, Mustafa Yalcin, Volkan Patoglu, "AssistOn-Gait: A Robot-Assisted Gait Trainer with an Active Pelvis-Hip Exoskeleton", Türkiye Otonom Robotlar Konferansı (TORK 2015), Istanbul, Turkey, 2015

Mustafa Yalcin, Volkan Patoglu, "Fiziksel Rehabilitasyon için Kendinden Hizalamalı Tam Kol Dış İskeletin Tasarımı ve Kontrolü", Türkiye Otonom Robotlar Konferansı (TORK 2014), Ankara, Türkiye, 2014

Besir Celebi, Mustafa Yalcin, Volkan Patoglu, "ASSISTON-KNEE: A Self Aligning Knee Exoskeleton", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2013), Tokyo, Japan, 2013 (IEEE IROS 2013, Best ICROS Application Paper Award)

Mustafa Yalcin, Bircan Uzunoglu, Elif Altintepe, Volkan Patoglu, "VNSA: Variable Stiffness Actuation based on Nonlinear Deflection Characteristics of Buckling Beams", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2013), Tokyo, Japan, 2013

Mustafa Yalcin, Volkan Patoglu, "Kinematics and Design of ASSISTON-SE: A Self-Adjusting Shoulder-Elbow Exoskeleton", The 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BIOROB 2012), Rome, Italy, 2012

HONORS

- IEEE/RSJ International Conference on Intelligent Robots and Systems, Best ICROS Application Paper Award, 2013, Tokyo, Japan
- IEEE/RSJ International Conference on Intelligent Robots and Systems Student Travel Support Winner, 2013, Tokyo, Japan,
- The Scientific and Technological Research Council of Turkey (TUBITAK) Doctorate Degree Fellowship, September 2014 – 2018

- The Scientific and Technological Research Council of Turkey (TUBITAK) Master's Degree Fellowship, September 2011 – 2013
- Sabanci University Undergraduate High Honor Scholarship (full tuition exemption) September 2006 – June 2011
- Sabanci University Extracurricular Activities Award, May 2008
- Ranked 658th in University Entrance Exam (ÖSS 2006) among 1.643 million students

SKILLS

Programming Skills and Working Environments

SolidWorks, MATLAB-Simulink, Python, SolidCam, AutoDesk Fusion 360, C++, C, Motion Genesis (Autolev), LaTeX, Adobe Illustrator, Adobe Premiere

Technical Skills

Mechanical and Computer-Aided Design, Kinematic and Dynamic Analysis, Simulation, Control Systems Design, Real-time Control, Optimal Control, Model Predictive Control, System Identification

Manufacturing Processes Knowledge

Machining, Cutting, Forming, 3D Printing, RIM, Molding, Composites, Welding

Language

Turkish (native), English (Advanced)

INTERESTS

Cycling, sailing, swimming, aviation, and aerospace