

# Yunus Terzioglu, CV

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METU-CENG

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## Research Interests

- Human Robot Interaction
- Human Robot Collaboration
- Motion/Manipulation Planning
- Machine Learning

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## Education

**2017 -** Middle East Technical University (METU), Ph.D. Candidate in Computer Engineering Department

- Ongoing research on Human Robot Interaction/Collaboration
- GPA: 3.75 / 4.0
- Advisor: Erol Sahin

**2015 - 2017** Middle East Technical University (METU), Ph.D. Candidate in Electrical and Electronics Engineering – Dropped at own will to change research field

- Intended to focus on Control Strategies for Robotic Systems
- GPA: - / 4.0
- Advisor: Tayfun Akin

**2012 -2015** Middle East Technical University (METU), M.S. in Electrical and Electronics Engineering

- Thesis: [High Performance Closed-Loop Analog Readout Circuit for Capacitive MEMS Accelerometers](#)
- GPA: 3.57 / 4.0
- Advisor: Tayfun Akin

**2007 -2012** Middle East Technical University (METU), B.S. in Electrical and Electronics Engineering

- GPA: 2.93 / 4.0

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## Research Experience

**2016-Present** PhD Studies on Robotics, METU-EEE, METU-CENG

- Human Robot Interaction (Current focus)
  - Ongoing research supported with User Studies in collaboration with Bilge Mutlu from University of Wisconsin-Madison
- Human Robot Collaboration (Current focus)
  - Ongoing research on HRC on the Factory Floor (funded TUBITAK project)
- Motion Planning
- User Studies
- Deep Learning
  - Generative Network Models
- Reinforcement Learning
  - Dynamic Movement Primitives
  - Learning from Demonstration
- Developmental Psychology

**2016** Visiting Researcher (Sep. to Dec.), MIT-LIDS, Sertac Karaman's Group

- Navigation, Autonomous Drones, Agile Flight

**2012 – 2015 Masters' research,** Inertial Measurement Systems, METU-EEE, METU-MEMS

- Micromechanical accelerometer and closed-loop capacitive readout circuit design
- Automation of the characterization test setups for micro-accelerometers
- Measurement-based post-fabrication characterization of capacitive micro-sensors
- Digital signal processing
- Analog/digital PCB design

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## Selected Academic Projects

- 2018** User Studies on Human Robot Interaction: Ongoing experiments are planned to be completed by the end of 2018
- 2018** Collaboration Security Watchdog: A standalone ROS-based security watchdog which runs on Raspberry Pi to monitor and secure the human-robot collaboration. (Published on ToRK 2018)
- 2017** Funded TUBITAK Project: Designing and developing an assistive/collaborative robotic system to work on factory floor in close proximity to humans (ongoing project)
- 2015** Design and Implementation of a  $5.5 \mu\text{g}/\sqrt{\text{Hz}}$  Closed-Loop MEMS Accelerometer, Master's Thesis Project, Advisor: Tayfun Akin
- 2015** Implementation of Path-Planning Algorithms within the Curriculum, Course: Robot Motion Planning and Control, taught by Uluc Saranlı
- 2011 – 2012** An Autonomous Robot that Can Climb a Vertical Wall, Undergraduate Thesis Project, *Best design project award*
- 2012** Designed a 0.6u CMOS rail-to-rail Band-Gap Reference IC with bias stability, Course: Analog Integrated Circuits, taught by Haluk Kulah
- 2011** Designed a 0.6u CMOS Phase Locked Loop locked at 10MHz, Course: Digital Integrated Circuits, taught by Tayfun Akin

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## Work Experience

- 2017 -** **Researcher,** METU Kovan Research Laboratory
  - Safe Human Robot Collaboration on the Factory Floor
- 2012 - 2016** **Scientific Project Expert,** METU-MEMS Research and Applications Center, Inertial Measurement Units Group - ANKARA
  - High Performance Closed-Loop Accelerometers
- 2012** **Part Time Engineer,** ASELSAN, Microelectronics Group – ANKARA
  - Embedded Test and Characterization Systems Design
- 2011** **Intern,** ASELSAN, Microelectronics Group – ANKARA
  - Embedded Test and Characterization Systems Design
- 2010** **Intern,** Czech Technical University – PRAGUE
  - Development of Procedures for Measuring the Shielding Efficiency of Carbon-Composite Textiles

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## Honors / Awards

- 2017 European Robotics Week host at Middle East Technical University Kovan Research Laboratory [Link to the event page](#)
- 2013 Worked as a technical advisor and team member in the award winning “Easy Guitar” project in the entrepreneurship competition “Yeni Fikirler Yeni Isler” in Turkey
- 2012 Awarded as the best project in senior students project fair with “An Autonomous Robot that Can Climb a Vertical Wall”
- 2008 – 2010 Listed in METU Honor Roll for 2 semesters
- 2008 – 2009 Listed in METU High Honor Roll for fall semester
- 2007 Ranked 287<sup>th</sup> among ~2 million students in the National University Entrance Exam
- 2007 Ranked 1<sup>st</sup> from Antalya Anatolian High School, Turkey

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## Academic Publications

- 2018 R. T. Sayre-McCord, W. Guerra, A. Antonini, J. Arneberg, A. Brown, G. Cavalheiro, Y. Fang, A. Gorodetsky, D. McCoy, S. Quilter, F. Riether, E. Tal, **Y. Terzioglu**, L. Carlone, and S. Karaman. Visual-inertial navigation algorithm development using photorealistic camera simulation in the loop. In *IEEE Intl. Conf. on Robotics and Automation (ICRA)*, May, 2018. **Featured on MIT Tech News: [Link](#)**
- 2018 F. C. Kurnaz, **Y. Terzioglu**, S. Buyukgoz, E. Sahin, ROS Tabanlı Bagimsiz Guvenlik Bekcisi Modulu (A ROS-Based Standalone Security Watchdog Module), Turkiye Robotbilim Konferansi (ToRK) (National Conference on Robotics), Istanbul, Turkey, April, 2018.
- 2016 T. Kose, **Y. Terzioglu**, K. Azgin, and T. Akin, “A Single-Mass Self-Resonating Closed-Loop Capacitive MEMS Accelerometer,” *IEEE Sensors Conference*, pp. 1-3, Orlando, FL, USA, October, 2016.
- 2016 A. Aydemir, **Y. Terzioglu**, and T. Akin, “A New Design and a Fabrication Approach to Realize a High Performance Three Axes Capacitive MEMS Accelerometer,” *Sensors and Actuators A*, April 2016.
- 2015 **Y. Terzioglu**, T. Kose, K. Azgin, and T. Akin, “A Simple Out-of-Plane Capacitive MEMS Accelerometer Utilizing Lateral and Vertical Electrodes for Differential Sensing,” *IEEE Sensors Conference*, pp. 525-527, Busan, South Korea, November 1-4, 2015.
- 2015 T. Kose, **Y. Terzioglu**, K. Azgin, and T. Akin, “A Single Mass Two-Axis Capacitive MEMS Accelerometer with Force Rebalance,” *2015 IEEE Int'l Symposium on Inertial Sensors & Systems (ISISS 2015)*, pp. 1-4, Hapuna Beach, HI, USA, March 23-26, 2015.
- 2014 **Y. Terzioglu**, S.E. Alper, K. Azgin, T. Akin, “A capacitive MEMS Accelerometer Readout with Concurrent Detection and Feedback using Discrete Components”, in *IEEE PLANS*, April, 2014.
- 2010 **Y. Terzioglu**, “Scalar Measurement of Electromagnetic Shielding Efficiency of Carbon Textiles”, in *Knowledge in Telecommunication Technologies and Optics (KTTO)*, December, 2010.

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## Selected Computer Skills

- ROS
- CMake
- C/C++ programming
- Python
- MATLAB
- SolidWorks
- Comsol
- SPICE
- Eagle CAD
- Verilog
- Cadence
- Agilent Vee

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## Selected Hobbies / Interests

- Performing Classical, Electric and Acoustic Guitar Player – Classical Guitar Teaching
- Performing Bass Guitar Player – METU Big Band Jazz Orchestra
- Advanced Rock Climber/Mountaineer – METU Mountaineering Society Executive Committee Chair
- Advanced Skier and Snowboarder
- Orienteering – Medalist
- CMAS 1-Star Scuba Diver
- Motorcyclist – Amateur Motorcycle Mechanic
- Hobbyist in DIY Electronics, and Wood/Metal Crafts
- Amateur Sailor

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## Languages

Turkish	<b>Native</b>
English	<b>Fluent</b>
French	<b>Beginner</b>

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## Test Scores

TOEFL	110
IELTS	8.0
GRE	152/170/3.5