

Alper Öner

Mechatronics, Control and Automation Engineering

Istanbul Technical University

RESEARCH FIELDS **Theoretical;** Mean Field Games, Multi-Agent Control, Stochastic Control, Optimal Control, Kalman Filter, Machine Learning, Artificial Intelligence, and Game Theory.

Implementation; Autonomous Vehicles, Robotics, Sensor Fusion, GUI Programming, Object Oriented Programming, Microcontroller, IoT, Computer Vision, Deep Learning.

EDUCATION **Istanbul Technical University**, Istanbul, Turkey

Ph.D. in Control and Automation Engineering Sep. 2011 – June 2018

Istanbul Technical University, Istanbul, Turkey

M.S. in Mechatronics Engineering Sep. 2009 – July 2011

Kocaeli University, Kocaeli, Turkey

B.S. in Mechatronics Engineering Sep. 2004 – June 2009

2nd rank within 94 students. (1 year German Language)

JOURNAL PAPERS

1. **A. Öner**, N. Saldi, and G. Ö. Günel, “Mean Field Multilayer Stackelberg Differential Games in Multi-Agent Systems,” **Appl. Comput. Math.**, ISSN 1683-3511 (print), Vol. 17, No.1, 2018, 72-95.

BOOK CHAPTER

1. V. Sezer, P. Boyraz, Z. Ercan, Ç. Dikilitaş, H. Heceoğlu, **A. Öner**, G. Öke, and M. Gökaşan, “Smart Mobile In-Vehicle Systems, Unmanned Ground Vehicle Otonobil: Design, Perception, and Decision Algorithms,” **Springer New York**, 2014, pp 47-56.

CONFERENCE PAPERS

1. **A. Öner**, A. A. Aktaş, and I. M. Atakli, “Burger Sales Forecasting in Quick Service Restaurants Using Wide-Deep Learning Neural Network,” in **the 30th European Conference on Operational Research**, Dublin, Ireland, 23-26 June 2019.
2. **A. Öner**, M. S. Albayrak, F. Güner, and I. Atakli, “An Activity Recognition Application based on Markov Decision Process Through Fish-Eye Camera,” in **the 2nd IEEE International Conference on Artificial Intelligence and Knowledge Engineering (AIKE 2019)**, Cagliari, Sardinia, Italy, 03-05 June 2019.
3. M. S. Albayrak, **A. Öner**, H. K. Ekenel, and I. M. Atakli, “Personalized Training in Fast-Food Restaurants Using Augmented Reality Glasses,” in **the 5th IEEE International Symposium on Educational Technology (ISET2019)**, Hradec Kralove, Czech Republic, 02-04 July 2019.

4. **A. Öner**, F. Güner, M. S. Albayrak, and G. Ünal, “A People Detection Application in Quick Service Restaurants Through Fish-Eye Camera,” in **the 27th IEEE Signal Processing and Communications Applications Conference (SIU 2019)**, Sivas, Turkey, 24-26 April 2019 (Poster).
5. M. S. Albayrak, **A. Öner**, and H. K. Ekenel, “Object Recognition on Augmented Reality Glasses,” in **the 27th IEEE Signal Processing and Communications Applications Conference (SIU 2019)**, Sivas, Turkey, 24-26 April 2019.
6. **A. Öner**, T. Başar, and G. Ö. Günel, “Mean Field Differential Games in Intelligent Transportation Systems,” in **the 5th IEEE Models and Technologies for Intelligent Transportation Systems (MT-ITS), 2017 International Conference on**, Napoli, Italy, 26-28 June 2017.
7. **A. Öner**, and G. Ö. Günel, “A case study in Istanbul E-80: Intelligent speed change at the highway for reducing gas emission,” in **the 4th IEEE Models and Technologies for Intelligent Transportation Systems (MT-ITS), 2015 International Conference on**, Budapest, Hungary, 3-5 June 2015.
8. **A. Öner**, and G. Ö. Günel, “Removing of the Laser Cluster Errors via Fisher Linear Discriminant Analysis in Unmanned Ground Vehicles,” in **Turkish National Comitee of Automatic Control 2014 National Meeting(TOK-14)**, Kocaeli, Turkey, 11-13 Sept. 2014, pp 528-533.
9. **A. Öner**, “Mapping of Incremental Dynamic Environment Using Rao-Blackwellized Particle Filter,” in **12th International Conference Intelligent Autonomous Systems (IAS-12)**, Jeju Island, Korea, June 26-29, 2012, pp. 715-724.
10. **A. Öner**, and G. Ö. Günel, “Mapping and Static Obstacle Detection in Unmanned Ground Vehicles,” in **Turkish National Comitee of Automatic Control 2011 National Meeting (TOK-11)**, Izmir, Turkey, 14-16 Sept. 2011.
11. **A. Öner**, and G. Ö. Günel, “Sensor Fusion with Occupancy Grid Map for Obstacle Segmentation in Intelligent Vehicles,” in **The 5th Biennial Workshop on Digital Signal Processing for In-Vehicle Systems**, Kiel, Germany, 4-7 Sept. 2011.
12. V. Sezer, Ç. Dikilitaş, Z. Ercan, H. Heceoğlu, **A. Öner**, A. Apak, M. Gökaşan, and A. Muğan, “Conversion of a conventional electric automobile into an unmanned ground vehicle (UGV),” in **IEEE International Conference on Mechatronics (ICM)**, Istanbul, Turkey, 13-15 April 2011.

AWARDS, AND
HONORS

EXCELLENT PAPER AWARD
5th IEEE International Symposium on Educational Technologies (ISET 2019)
AWARD FOR THE BEST PAPER PRESENTED BY A YOUNG RESEARCHER
5th IEEE International Conference on Models and Technologies for Intelligent Transportation Systems (MT-ITS 2017)
The Scientific and Technological Res. Coun. of Turkey (TUBITAK) Sch. for the M.S. degree.
TUBITAK Scholarship for the Ph.D. degree.
TUBITAK International Research Scholarship for Ph.D. students.
Graduating from Kocaeli University Mechatronics Eng. Dep. with a degree 2nd rank.
Kocaeli University High Honor Student during all undergraduate terms.

INDUSTRIAL &
ACADEMIC
EXPERIENCE

Solvoyo, Turkey,
AI Engine Department in Solvoyo Software Development, January 2020 - ...
Job Description: *Managing the team, Designing AI based supply chain strategy of Solvoyo, and giving consulting service to costumers from different sectors,*
Position: AI Engine Team Lead.

MEF University, Turkey,
Graduate Program In Information Technologies, September 2018 - August 2020
Course: *2018-2019-2020-01-ITC503-01: Artificial Intelligence,*
Course: *2018-2019-2020-02-ITC503-09: Object Oriented Programming in Python,*
Position: Artificial Intelligence Instructor.

Ata Technology Platform (Ata Holding), Istanbul, Turkey,
Innovation and Transformation Department, August 2017 - January 2020
Job Description: *Software engineering on Machine Learning and IoT projects of franchiser of Burger King in Turkey and China,*
Position: Machine Learning&Computer Vision Engineer (Python, Tensorflow, NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, Jupyter Notebook, Optimization, Wide&Deep Learning, R-CNN, YOLO, MobileNets, OpenCV, Linux-Ubuntu, Amazon Web Services(AWS), MySQL, GitHub, Docker, Jetson TX2, C, ZigBee, Arduino, Raspberry Pi).

Yildiz Holding (GODIVA, McVities, ULKER), Istanbul, Turkey,
PleiOne Lab, June 2017 - August 2017
Job Description: *Creating, developing and managing technology projects of 3rd largest biscuit producer in the world,*
Position: Creative Technologist (Managing the team, C/C++, tesseract, IoT and CV).

Coordinated Science Lab, University of Illinois at Urbana-Champaign, IL, USA,
Decision and Control Laboratory, January 2016 - January 2017
Supervisor: Prof. Tamer Başar,
Project: *Stochastic Mean Field Games in Multi-Agent Systems,*
Position: Research Scientist.

Istanbul Technical University, Turkey,
MERC, Sep. 2014 - Dec. 2015, Jan. 2017 - June 2017
Supervisor: Asst. Prof. Gülay Öke Günel,
Project: *ITUCiTSim Traffic Simulation GUI & Intelligent Transportation Project,*
Position: Software Engineer (QT Creator, C/C++, Game Theory, Multi-Agent Control).

Istanbul Technical University, Turkey,
Mechatronics Education and Research Center, March 2010 - June 2017
Position: Teaching and Research Assistant.

Istanbul Technical University, Turkey,
Artificial Intelligence and Robotics Laboratory Jan. 2014 - Sep. 2014
Supervisor: Assoc. Prof. Sanem Sariel,
Project: *Automated Planning and Learning Methods for Autonomous Mobile Robots,*
Position: Perception Engineer (Kinect, Bayesian Inference, OpenCV, Semantic Perception, Object Detection & Tracking, ROS, PCL, 3D-Camera, C/C++, LINUX).

Mechatronics Education and Research Center, Istanbul Technical University, Turkey,
 Hybrid and Electrical Vehicles Control and Simulation Lab Oct. 2009 - Jan. 2014
 Supervisor: Prof. Ata Muğan,
 Project: *Unmanned Land Vehicles Project*,
 Position: Perception Engineer (Laser, IBEO, SICK, Ultrasonic, 2D-Camera, SLAM,
 Extended Kalman Filter, Particle Filter, C/C++, Bayesian Inference, Object Detection
 & Tracking, LabVIEW, Webots, OpenCV, ROS, LINUX).

Mechatronics Education and Research Center, Istanbul Technical University, Turkey,
 Hybrid and Electrical Vehicles Control and Simulation Lab Jan. 2011 - Sep. 2011
 Supervisor: Prof. Ata Muğan,
 Project: *Convention of Traditional Car to Steer by Wire*,
 Position: Research and Development Engineer (dSPACE, DC Motor, Microcontrollers,
 Motor Drivers, MATLAB, C/C++).

CERTIFICATIONS

The Name	Hours	The Institution
System Programming and Advanced C	180	C and System Programmer Association
Advanced Java	120	C and System Programmer Association
Parallel Programming	80	UHEM
C/C++	180	C and System Programmer Association
CATIA	65	ITU

SKILLS

Computing: Python, Tensorflow, C/C++, MATLAB, LabVIEW, Wolfram Mathematica, Linux
 Ubuntu, Robot Operation Systems(ROS), OpenCV, Point Cloud Library(PCL),
 OpenMPI, Java, C#, MySQL, Webots, Assembly, L^AT_EX, GitHub, AWS, Docker,
 NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn, Jupyter Notebook, Anaconda

Electronics: Code Composer(TI-DSP), Altium Designer, Simatic, Cosimir, Visual Basic, Keil
 uVision, Proteus-ISIS,

Mechanics: SolidWorks, CATIA, AutoCAD, Fluidsim(H-P).