

**E T N A**  
**2 0 2 0**

**Dr.**

Aysegul UCAR





# Dr. Ayşegül Uçar

Department of Mechatronics Engineering  
University of Fırat, Elazığ, Turkey



[agulucar@firat.edu.tr](mailto:agulucar@firat.edu.tr)

<https://abs.firat.edu.tr/agulucar>



# My Country-Turkey





# My University







# Firat University





# Firat University-Quick Glance



In 1967, the departments of Mechanical and Civil Engineering were established with the name of "*High Technical School*". With the establishment of more departments, the school was made a university and named as Firat University in 1975.

Firat University, with over 40000 students and 1800 academics, is one of the largest universities in Turkey.

- Faculty of Communication
- Faculty of Theology
- Faculty of Economic and Administrative Sciences
- Faculty of Humanity and Social Sciences
- Faculty of Science
- Faculty of Education
- Faculty of Engineering







# Firat University







## Faculty of Engineering



Firat University is one of the best in terms of Engineering and Technology.

The students are prepared as specialists by being taught with the most innovative teaching methods.

According to a study by University Ranking by Academic Performance, the Engineering Faculty ranks the 8th in Turkey.







# Faculty of Engineering



**Currently Faculty of Engineering has departments as:**

- Department of Computer Engineering
- Department of Bioengineering
- Department of Environmental Engineering
- Department of Industrial Engineering
- Department of Electrical and Electronic Engineering
- Department of Food Engineering
- Department of Civil Engineering
- Department of Geodesy Engineering
- Department of Geology Engineering
- Department of Chemical Engineering
- Department of Mechanical Engineering
- Department of Mechatronics Engineering
- Department of Metallurgy and Materials Engineering
- Department of Software Engineering





# My Previous Projects

1- Development of a new deep learning algorithm for the training of humanoid robots. Tubitak 1003, (2017- to be finalized at December 2019). Fund: 90000 Euro. Project Supervisor.

2-Development of Perceiving System for Autonomous Vehicles Using Learning Based on GPU, Firat University Scientific Project (2017- to be finalized at April 2018). Fund: 5000 Euro. Position: Project Supervisor.

3- Accelerated Image Processing by Using FPGA FPGA, Firat University Scientific Project, (2017- to be finalized at April 2018). Fund: 3000 Euro. Position: Project Supervisor.







# My Previous Projects

4-Simultaneous Localization and Mapping (SLAM) for Mobile Robots using RP Lidar and Kinect Sensor, Firat University Scientific Project, March 2017. Fund: 4000 Euro. Position: Project Supervisor.

5-Object Detection by using FPGA and Matlab, Firat University Scientific Project, November 2014. Fund: 3500 Euro. Position: Project Supervisor.

6- Human Robot Interaction on Nao Robot Platform, Firat University Scientific Project, May 2012 – January 2014. Fund: 7500 Euro. Position: Project Supervisor.





# My Specifying Areas in H2020

H2020 2018 CALL TOPICS - AUTOMATED ROAD TRANSPORT

H2020 2018 CALL TOPICS - SAFE, INTEGRATED AND RESILIENT TRANSPORT SYSTEMS

H2020 2018 CALL TOPICS - BLUE GROWTH

H2020 2018 CALL TOPICS - GREEN VEHICLES





# My Project Proposal

This project proposal will provide learning systems for both safety and energy efficiency for driving support systems in active communicating electric vehicles.

With the project work, innovative approaches to the control systems of electric vehicles will be developed and these approaches will be verified both in the laboratory environment and as prototypes.

In addition, it aims to produce information about technologies such as V2V, V2I, especially about what kind of studies can be done about current traffic infrastructure.



# Current Consortium

University of Cassin, Italy

Technical University of Cluj-Napoca, Romania





# Our Skills and Profile of the Partners Sought

I have an expert research group at autonomous vehicle project and human-machine/robot interaction.

We have a powerful information about a lot of machine learning methods such as deep learning and deep reinforcement learning, image processing, and control of nonlinear systems.

We especially needs to a powerful research platform or electrical vehicle in order to carry out autonomous vehicle applications.

We needs to mechanical engineer partners having practical ability about electrical vehicles.