

Fetullah Atas



Personal Information

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Section 1, Jianguo South Road, Daan District, Room 1013, No. 81, Taipei City/TAIWAN

Education

MASTER'S DEGREE | 08.2017-(Continuing) | NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY | Taipei, TAIWAN

Major: Mechatronics Engineering

Related coursework: Machine Learning, Deep Learning, Machine Vision, Control Theory and Applications

MASTER'S DEGREE | 08.2017 (Partially Completed) | ISTANBUL TECHNICAL UNIVERSITY | Istanbul, TURKEY

Major: Mechatronics Engineering

Related coursework: Computer Vision, Robot Design and Control, Sensor Technology

BACHELOR'S DEGREE | 08.2016 (Completed) | ISTANBUL GELISIM UNIVERSITY | Istanbul, TURKEY

Major: Mechatronics Engineering

Related coursework: Signals and Systems, Microprocessors, Embedded Systems, Linux/UNIX

Skills & Abilities

- Python
- C++, C
- Linux/Unix
- MATLAB, ROS, Google Cartographer

Practical Experience

Research Assistant | NATIONAL TAIPEI UNIVERSITY OF TECHNOLOGY | JUNE, 2017 - Current | Taipei, TAIWAN

Intelligent Machine Vision System Lab, Computer Vision, Machine Learning, Robotic Control, ROS, Google Cartographer,

INTERN | LIFT PARTS & SERVICE S.A.C. | JUNE-OCTOBER 2014 | Lublin, POLAND

Flow Control for Elevators.

INTERN | KABAN MACHINES | JUNE-AGUST 2013 | ISTANBUL TURKEY

Servo Motor Control, Embedded Software for Automated Assembly Robots

Languages

- English (Upper Intermediate)
- Turkish (Native Speaker)

Scholarships, Awards

- Taipei Tech Foreigner Student Scholarship
- Turkish Ministry of Higher Education Fellowship for Graduate Studies
- European Commission's Erasmus Scholarship for Internship and Education as Exchange Student.
- Full Scholarship From Istanbul Gelisim University

Projects & Publications

A MULTI-SCALE CONVOLUTIONAL NEURAL NETWORK FOR 3D VEHICLE PERCEPTION

3D perception is very crucial process for autonomous driving and it is widely studied recently. In this project we aimed to design A Convolutional Neural Network(CNN) for 3D detection of cars. Camera parameters were used to derive coordinates of car in world frame. Comparison of method with LIDAR data showed that the proposed architecture is capable detect cars in 3D.

Google Cartographer for Indoor Building Mappings

Being a new technology, Google Cartographer can produce highly accurate maps in both indoor and outdoor environments. This allows robots move safely and with higher performance. A YouTube video that shows visualization of this project is ;

(<https://youtu.be/pa3h3PRIOA0>)

Autonomous Lawn Mower

Almost all autonomous mobile robots need localization, in order to know their geometric pose, so that they can take decisions according. In this project we propose a system which fuse GPS and camera visualization for localization purposes. Also filtering visual camera data to detect unmowed lawn directly. Operation of robot is optimized with proposed method. More details can be found on my personal website <https://jediofgever.github.io/projects.html>)

Autonomous Aerial Vehicle's State Estimation Using Extended Kalman Filter

In autonomous systems it is important to beware of current dynamic states. Also if possible it is excellent to have an idea what will be evolution of this dynamics. In that order the Kalman Filter is a optimal choice. Please refer to the link below for detailed information about this project. (<https://github.com/jediofgever/kalman-filter/blob/master/UavsStateEstimating.ipynb>)

UAV's Autopilot and Sensors Simulation Using Matlab Simulink

When starting a real project, it has to be examined previously, aware of this methodology this project is dedicated to evaluate the dynamics and response of those dynamics under certain conditions. Equations and mathematical model used is referred to this (<http://uavbook.byu.edu/doku.php>) book. Source code and more can be found on Github page(<https://github.com/jediofgever/UAV>)

Atas, Fetullah. (2017). Kinematic and Dynamic Modeling of Differential-Drive-Based Autonomous Grass Mower Robot https://www.researchgate.net/publication/315694490_Diferansiyel-Surucu_Tabanli_Otonom_Cim_Bicme_Robotu_%27nun_Kinematik_ve_Dinamik_Modellemesi

References

Chih-Ming Hsu, Phd National Taiwan University

Asst. Professor, National Taipei University of Technology,

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Kadir Erkan, Phd University of Tokyo

Assoc. Professor, Yıldız Technical University,

E-Mail : kerkan@yildiz.edu.tr

Aydin Yesildirek, Phd University of Texas

Assoc. Professor, Yıldız Technical University,

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