Aybora Köksal

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Education

Middle East Technical University (METU) Ankara, Turkey
Master of Science in Electrical and Electronics Engineering (GPA: 3.71/4.00) *Sep. 2018 – Sep. 2021*

Thesis: Moving Object Detection with Supervised Learning Methods

Advisor: Prof. Dr. A. Aydın Alatan, Co-Advisor: Dr. Kutalmış Gökalp İnce

Middle East Technical University (METU) Ankara, Turkey
Bachelor of Science in Electrical and Electronics Engineering (GPA: 3.55/4.00) *Sep. 2012 – Jun. 2017*

Rank: 27/386 in the department based on GPA, graduated as a High Honor student

Middle East Technical University (METU) Ankara, Turkey
Double Major in Mathematics (GPA: 3.06/4.00), graduated as an Honor student *Sep. 2015 – Jun. 2018*

Work Experience

METU Center For Image Analysis Ankara, Turkey
Research Assistant *June 2019 – present*

- Academic research about moving object detection
- Fine-tuning, implementing and optimizing a state-of-the-art object detector into a C++ project using TensorRT
- Supervising undergraduate and new graduate students within the center for their projects

ASELSAN Ankara, Turkey
Systems Engineer *April 2017 – May 2019*

- Research, system integration and algorithm design about communication systems
- Creating Keras/Tensorflow projects for various communication applications

ASELSAN Ankara, Turkey
Summer Intern *June 2016 – July 2016*

- Research and development about smart grids and substation automations

VESTEL Electronics Manisa, Turkey
Summer Intern *August 2015*

- Research and development about circuit boards of state-of-the-art televisions

Teaching Experience

Middle East Technical University (METU) Ankara, Turkey
Research and Teaching Assistant *February 2020 – present*

- **EE583 Pattern Recognition:** Preparing and grading homeworks
- **EE230 Probability and Random Variables, EE430 Digital Signal Processing, EE499 Vector Space Methods:** Holding office hours, grading quizzes and homeworks, preparing lecture notes on LaTeX
- **EE213/214 Electrical/Electronic Circuits Laboratory:** Holding office hours, attending laboratories to supervise undergraduate students, preparing and grading exams, grading student reports

Awards and Honors

- Full scholarship from TUBITAK (The Scientific and Technological Research Council of Turkey) to cover MSc studies
- Full scholarship from TUBITAK to cover Double Major studies
- Listed in Dean's High Honor list 5 times and Dean's Honor list 3 times in 8 terms during BSc studies in METU
- Transferred to Electrical and Electronics Engineering with the quota which is offered by institute to the honored students during BSc studies in METU
- **Best Paper Award:** CVPR 2020 Workshops, 1st Anti-UAV Workshop & Challenge

Publications

1. **A. Köksal**, Ö. Tuzcuoğlu, K. G. İnce, Y. Ataseven, A. A. Alatan, "Improved hard example mining approach for single shot object detectors.", IEEE International Conference on Image Processing (ICIP), 2022. **(accepted)** arxiv preprint: 2202.13080

2. K. G. İnce, **A. Köksal**, A. Fazla, A. A. Alatan, "Semi-automatic video annotation for visual object tracking.", IEEE/CVF International Conference on Computer Vision (ICCV) Workshops, 2021. doi: 10.1109/ICCVW54120.2021.00143

3. **A. Köksal**, K. G. İnce, A. A. Alatan, "Effect of annotation errors on drone detection with YOLOv3." IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops, 2020. **(Best paper)** doi: 10.1109/CVPRW50498.2020.00523

4. **A. Köksal**, E. Akdemir, Ö. Oruç, "Spectrum compression." IEEE Signal Processing and Communications Applications Conference (SIU), 2018. doi: 10.1109/SIU.2018.8404263

Extracurricular Work Experience

Radio ODTU (METU)   Ankara, Turkey
Music Editor and DJ   *November 2012 – September 2016*

- Responsible for scheduling songs daily and creating Top 40 list weekly

Skills

Languages: Turkish (native)
                  English (fluent - TOEFL iBT: 99/120)
Programming Languages: C, C++, Python (with PyTorch, Tensorflow, OpenCV libraries), MATLAB, Bash
OS: MacOS, Ubuntu, Windows
Programs: MS Office, Adobe Audition, Adobe Premiere, Anaconda, PyCharm, LaTeX
Communication: Participated as a presenter in a couple of events which were conducted by the presidency of the university during student life.

Prepared on September 4, 2022.