Ada GÖRGÜN

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Ankara, Turkey | adagorgun

Research Interests

Machine Learning, Deep Learning, Computer Vision, Image Processing

Education

10/2020 – 08/2023 | **M.S. in Electrical and Electronics Engineering** | ***Middle East Technical Uni. EEE***
Specialization Area: Signal Processing | CGPA: 4.00 / 4.00
Thesis : *Interpreting Convolutional Blocks as Feature Embedding by Template Matching for Image Recognition*
Supervisor: Prof. Dr. A. Aydın Alatan

10/2015 – 07/2020 | **B.S. in Electrical and Electronics Engineering** | ***Middle East Technical Uni. EEE***
Specialization Area: Signal Processing and Biomedical Engineering
CGPA: 3.71 / 4.00 Graduated as a High Honor Student

Publications

08/2023 | **Knowledge Distillation Layer that Lets the Student Decide** | ***Paper***
Author(s): **Ada Görgün**, Yeti Ziya Gürbüz, and A. Aydın Alatan
Accepted as a conference paper at the British Machine Vision Conference 2023 (BMCV 2023)

10/2022 | **Feature Embedding by Template Matching as a ResNet Block** | ***Paper***
Author(s): **Ada Görgün**, Yeti Ziya Gürbüz, and A. Aydın Alatan
Accepted as a conference paper at the British Machine Vision Conference 2022 (BMCV 2022)

Work Experience

01/2024 – Present | **Research Scientist** | ***Max-Planck-Institute for Informatics***

09/2020 – 12/2023 | **Researcher** | ***METU Center for Image Analysis***
- *Designing and testing face detection algorithms using **Python**.*
- *Designed an enhanced SSA simulator for generating realistic space images using **Python**.*
- *Designed frameworks for detecting and segmenting ships, detecting resident space objects (RSOs) from high-resolution optical images using **Python** and **MATLAB**.*
- *Participated in the optimization of SOLOv2 for small object detection and segmentation.*

10/2018 – 09/2020 | **Undergraduate Student Researcher** | ***METU Center for Image Analysis***
*Developed an algorithm for semantic segmentation by uniting the concepts of fully-connected networks and convolutional neural networks with super-pixels using **Python**.*

07/2019 – 09/2019 | **Intern** | ***ASELSAN, Turkey***
*Developed an algorithm for radar target classification on micro-doppler signatures of drones and birds using LSTM in **MATLAB**.*

06/2018 – 08/2018 | **Intern** | ***Mobilus-Invidyo, Turkey***
*Developed a foundation on deep learning and implemented semantic segmentation using U-NET in **Python**.*

Relevant Projects

Pattern Recognition: Compared two methods for ship detection from satellite images, one using deep-learning, another one using graph-cut.
Machine Vision: Compared two methods for semantic segmentation, one using super-pixels joined with deep learning, another one using GrabCut.
Adaptive Signal Processing: Focused on optimum filtering theory and implemented various adaptive filters including LMS, ϵ-NLMS, APA, RLS, Leaky LMS, Signed-error LMS for comparison using **MATLAB**. Implemented a mouse tracker with Kalman Filter using **C** and **LabVIEW**.
Optimization: Implemented various optimization algorithms including Gradient Descent Method, Newton Method, Davidon-Fletcher-Powell method, line search algorithms and a project using the enhanced version of the Salp Swarm Algorithm (Available on Github)

Honors and Awards

2020 | **Bülent Kerim Altay Award** — ***Bülent Kerim Altay Awards Website***
An award given to students who has 4.0 GPA.

2016 – 2020 | **High Honor Student** — ***METU Rules and Regulations Article-28***
Semester high honor student 6 times. A title given to students with a GPA greater than 3.5.

Certificates & Other Skills

Certificates: IELTS Academic 8 / 9 (11/2022-11/2024)
Simulation & Design: LT Spice, Quartus II, Verilog, LabVIEW, Keil μVision
Utilities: LaTeX(Experienced), GitHub (Experienced), Microsoft Office applications (Experienced), Ubuntu (Experienced)

Languages

Natural: Turkish (Native Speaker), English (Advanced)
Programming: Python, MATLAB, C++, C
Machine Learning Libraries: PyTorch, TensorFlow, Scikit-Learn
Computer Vision Libraries: OpenCV, PIL

Hobbies & Other Interests

Playing Piano, Playing Chess, Playing Tennis, Swimming

References

Prof. Dr. Aydın ALATAN , Electrical and Electronics Engineering Department, Middle East Technical University
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Prof. Dr. Çağatay CANDAN , Electrical and Electronics Engineering Department, Middle East Technical University
Contact: ccandan@metu.edu.tr, +90-312-210-2355
Prof. Dr. Tolga Çiloğlu , Electrical and Electronics Engineering Department, Middle East Technical University
Contact: ciltolga@metu.edu.tr, +90-312-210-2352
Dr. Engin Tola , Aurvis-METU Center for Image Analysis
Contact: engintola@gmail.com
Dr. Yeti Ziya Gürbüz , Electrical and Electronics Engineering Department, Middle East Technical University
Contact: yetigurbuzz@gmail.com