Ada GÖRGÜN

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Research Interests

Machine Learning, Deep Learning, Computer Vision, Image Processing

Education

07/2024 – Present
Doctor of Philosophy in Computer Science — ***Universität des Saarlandes***
Supervisors: Prof. Dr. Bernt Schiele, Dr. Jonas Fischer

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

Work Experience

01/2024 – Present
PhD Student — ***Max-Planck-Institute for Informatics***
Researching on representation learning and the explainability of deep networks in the context of computer vision.

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**.

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**.

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)**

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
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Prof. Dr. Tolga Çiloğlu , Electrical and Electronics Engineering Department, Middle East Technical University
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Dr. Engin Tola , Aurvis
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Dr. Yeti Ziya Gürbüz , MetaDialog
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