

Savaş ATTARZADE

Data Science | ML | AI | MLOps | NLP | Computer Vision Engineer

Strategic and results-driven Data Scientist with a robust track record in applying advanced machine learning and artificial intelligence techniques to unravel intricate problems. Proficient in the confluence of data science, MLOps, APIs, NLP, computer vision, and Azure, showcasing deep expertise in Python, C++, TensorFlow, and PyTorch. Meticulous in approach, I bring a commitment to innovation, delivering cutting-edge solutions in machine learning and artificial intelligence.

My comprehensive experience spans Python for data manipulation (NumPy, Pandas) and machine learning (Scikit-learn), as well as optimizing and deploying models efficiently using C++. In the realm of deep learning, I command industry-leading frameworks such as TensorFlow and PyTorch. Notably, my expertise extends to Azure for cloud-based solutions and ZenML for effective MLOps implementation.

In addition to my proficiency in MLOps, I bring rich experience in data science, adept at uncovering actionable insights from complex datasets. My skill set extends to computer vision, where I have successfully implemented models for fabric defect detection and segmentation, malaria-infected cell classification, brain tumor detection and classification, generating fake defected fabric samples using conditional GAN, and much more.

As a seasoned practitioner, I excel in leading cross-functional teams through the complete data science lifecycle. My commitment to adopting MLOps best practices, coupled with hands-on experience in Azure and ZenML, has streamlined deployment processes, maximizing efficiency and ensuring sustainable model performance.

I possess a strong analytical mindset and a proven ability to design and implement APIs, facilitating effective communication between machine learning models and production systems. This holistic approach has resulted in successful collaborations and the delivery of impactful AI and ML applications, including those in the domain of computer vision.

Beyond my technical prowess, I have a robust background in deploying AI models using Flask, Heroku, and Docker, both locally and in cloud environments. I leverage Docker extensively for ML model deployment and have hands-on experience creating and deploying APIs using ZenML. Additionally, I continuously contribute to the scientific community by publishing articles in highly respected scientific journals and actively participating in conferences focused on artificial intelligence.

With a passion for continuous learning, I stay abreast of the latest developments in the field, contributing to a dynamic and forward-thinking approach in all projects. My ability to bridge the gap between theory and practical implementation, coupled with my extensive knowledge of Python, C++, TensorFlow, PyTorch, Azure, ZenML, data science, and computer vision, positions me as a valuable asset in any data science or artificial intelligence initiative.



WORK EXPERIENCE

FACULTY MEMBER: KERKÜK KALEM UNIVERSITY, 2017 - 2021

As a faculty member at Kalem University, I had the opportunity to develop my academic career significantly. Thanks to this experience, I have participated in many academic seminars and conferences.

AI AND SOFTWARE ENGINEER: Egemen Software and Automation Co., 2022 - 2023

Developing various software projects based on Machine Learning using Python and C++.

FACULTY MEMBER: Northern Technical University (NTU), 2023 - ONGOING

Giving lectures on Python, C++, Electronics and Communication Systems.



EDUCATION

PhD: 19 MAY UNIVERSITY, 2019 - 2025

MASTER'S DEGREE: İSTANBUL UNIVERSITY, 2010 - 2013

BACHELOR'S DEGREE: KIRKUK TECHNICAL UNIVERSITY, 2004 - 2008



SCIENTIFIC ARTICLES/ CONFERENCES

- Cyclostationary Features Based Spectrum Sensing For Cognitive Radio Systems (2014 - IJSER)
- Complementary Power Supply to compensate the Wind Power in Water Electrolytic System for Hydrogen Production (2019 - IEEE)
- A Hybrid Machine Learning Approach to Fabric Defect Detection and Classification (2022 - IEEE)
- Improved Malaria Cells Detection Using Deep Convolutional Neural Network (2023 - IEEE)
- Conditional Image-To-Image Translation GAN for Fabric Defect Data Augmentation (Under review - Springer)
- SavasNet A State-Of-Art CNN Model For Fast Detecting And Classifying Fabric Defects (Under review - Elsevier)



CONTACT INFORMATION



savaş-attarzade



<https://github.com/SavasAtt>

ML | AI | Computer Skills



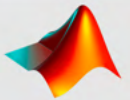
Python



C#



C++



Matlab



Azure



ZenML



mlflow



TensorFlow



Keras



Numpy



Open CV



PyTorch

Pytorch



Scikit-learn



Pygame



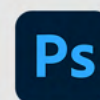
YOLO



Pandas



Flask



Adobe
Photoshop



Adobe
Premiere Pro



Heroku



Docker



Linux



Colab Pro



VS Code

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SAMPLE PROJECTS

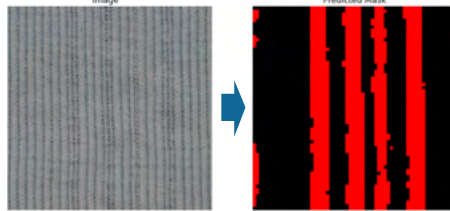
REAL TIME FABRIC DEFECT DETECTION IN C++:

PYTHON, TENSORFLOW, PYTORCH, OPENCV, C++

A vast and comprehensive dataset of various fabric defects was collected, labeled, and curated with specific criteria to facilitate the training of a highly efficient and accurate AI model for detecting and classifying fabric defects. The proposed model has been meticulously designed and trained to perform seamlessly in diverse situations and challenging circumstances, making it well-suited for real-life applications. For further optimization, the trained model was deployed using the CUDA and C++ environment, enabling it to operate even faster and be readily integrated into inspection machines. The proposed model demonstrated outstanding performance on a video footage with a resolution of 1280x720, captured by a basic phone camera, accurately detecting all fabric defects with a high speed of 17-20 frames per second, using a low-end GPU (GTX 1050 Ti). Further optimization techniques will be implemented to enhance the model's accuracy and speed, aiming to achieve 35-40 frames per second with the same GPU.



Video processing in C++

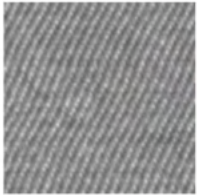


Single image prediction

FABRIC DEFECT DATA AUGMENTATION WITH GAN:

PYTHON, TENSORFLOW, KERAS

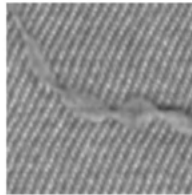
In order to augment small fabric defect datasets, an unlimited number of new real-like samples were produced by using GAN and Deep Faking techniques.



Defect free sample



Defect mask

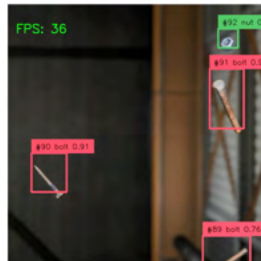


Defected sample

YOLO IMPLEMENTATION FOR OBJECT DETECTION, COUNTING AND TRACKING:

PYTHON, TENSORFLOW, PYTORCH, YOLO

YOLOv8, the latest version of YOLO (You Only Look Once), was utilized for detecting, counting, and tracking fast-falling objects in a video footage. Furthermore, other applications of YOLO were also implemented, including face recognition for attendance tracking. The detailed code for both training and testing processes can be found on our GitHub page.



CLASSIFICATION OF COMPOSITION SENTENCES WRITTEN BY HIGH SCHOOL STUDENTS WITH NLP TECHNIQUES:

PYTHON, TENSORFLOW, NLTK

In a software competition carried out by Kaggle, composition sentences written by high school students in the USA were asked to be classified into 7 different types (Introduction, purpose, claim, evidence, conclusion ...). While the team that won the first place in this competition with accuracy rate of 75.3%, I managed to achieve only 75% accuracy by developing a model with the help of TensorFlow and NLTK.



LANGUAGES



TURKISH



ENGLISH



ARABIC

MACHINE LEARNING SKILLS

- MLOps, Azure, ZenML, mlflow
- RNN, CNN, DNN
- REGRESSION METHODS:
(Random Forest, KNN, ..)
- GAN, Conditional GAN
- Deep Faking
- NLP
- YOLO Models
- SEQ2SEQ
- LSTM
- OBJECTS DETECTION
- OBJECT TRACKING
- TIME SERIES FORECASTING

PERSONAL ABILITIES

- Effective written-oral communication
- Tendency to team work
- Persuasion ability
- Creativity
- Ability to analyze problems
- Ability to produce alternative solutions for problems
- Developing innovative strategies
- Organizational ability
- Ability to develop new ideas
- Counseling/coaching skills
- Ability to make quick and effective decisions
- Being successful in stress management
- Successful time management
- Taking responsibility

HOBBIES

