europass

# Dawood Wasif


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**GitHub:** https://github.com/dawoodwasif

**Date of birth:** 14/07/2000 **Nationality:** Canadian, Pakistani


## ABOUT ME

I am a machine learning engineer with a software engineering background and am pursuing a Bachelor's degree in Computer Science. I am enthusiastic about deep learning models and big data to create new insights and answer questions about why, what, and how using Explainable AI and effective Uncertainty Quantification tools.

## WORK EXPERIENCE

[ 07/2023 – Current ]

### Machine Learning Engineer

***DCube Tech.*** https://www.linkedin.com/company/dcube-labs/

**City:** Islamabad

**Country:** Pakistan

- Working on BERT transformers (LayoutLM) for auto-scalable Inference-as-a-Service of Medical Documents (Document Classification, OCR, NER)
- Conducted QA of Inference Pipelines for Medical Documents NER, presented relevant metrics (Precision, Recall, F1 score) to non--technical stakeholders.
- Integrating OpenAI's ChatGPT with Phelix's Chatbot, for increasing customer engagement and interaction.

[ 09/2022 – Current ]

### Guest Scientist

***International AI Future Lab: AI4EO, TUM*** https://ai4eo.de/

**City:** Munich

**Country:** Germany

- Working with the "Uncertainty" working group under the Chair of Data Science in Earth Observation
- Currently researching on Uncertainty Estimation for deep neural networks for Earth Observation in large-scale scene understanding and interpretation

[ 07/2022 – Current ]

### Machine Learning Engineer

***Omdena*** https://omdena.com/local-chapters/islamabad-pakistan-chapter/

**City:** Islamabad

**Country:** Pakistan

- Collaborated and led feature engineering task on Omdena local project of addressing the issue of pipe-borne water availability in Lagos, Nigeria as a Project Task Leader
- Carried out multiple feature engineering techniques such as feature transformation, outlier detection, feature reduction, feature selection, etc.
- Selected as Local Chapter Lead of Islamabad, Pakistan to work on open-source projects for the welfare of community
- Led and completed local chapter project for 'Flood Extent Mapping using Computer Vision and Satellite Imagery'

[ 06/2022 – 06/2023 ]

### University research associate

***Machine Vision and Intelligent Systems Lab, SEECS, NUST*** http://vision.seecs.edu.pk/

**City:** Islamabad

**Country:** Pakistan

- Research in the field on precision agriculture, crop type mapping, phenological detection of rice crop, data fusion with satellite and drone imagery
- Collection and analysis on a novel multispectral UAV dataset of Basmati rice variants from Southern Punjab
- Mapping rice phenological (growth) stages using NDVI change detection on interpolated cubic splines

[ 07/2022 – 09/2022 ]

### Machine Learning Intern

***Neurog*** https://neurog.ai/

**City:** Islamabad

**Country:** Pakistan

- Built a Computer Vision-based Real-time Parking Occupancy Detection and Tracking System from scratch, a website for monitoring and analyzing statistics of car in a parking lot with features such as total car over time, current cars in parking lot, live camera feed of parking lot etc.
- Worked on complete production of the project from model training to website deployment and complete documentation and was awarded the “Outperforming Intern of the Cohort” Award out of all interns

[ 06/2021 – 08/2021 ]

### University research intern

***TUKL Research and Development Lab, SEECS, NUST*** https://tukl.seecs.nust.edu.pk/

**City:** Islamabad

**Country:** Pakistan

- Worked on project of 'Fish Classification', in particular Few-Shot Learning for large-scale pre-trained classification model
-Technical training through Deeplearning.ai and Andrew Ng courses

[ 11/2020 – 01/2021 ]

### Software Engineer

***Federal Investigation Agency (FIA)*** https://www.fia.gov.pk/ibms

**City:** Islamabad

**Country:** Pakistan

- Completely rebuilt the website for IBMS (Integrated Border Management System) for FIA, using ASP.NET and Bootstrap for front end
- Worked on front end designing, constructing and complete testing of the website

## EDUCATION AND TRAINING

[ 08/2019 – Current ]

### Bachelor of Science in Computer Science (BSCS)

***National University of Science and Technology (NUST)*** https://nust.edu.pk/

**Address:** H-12, 44000, Islamabad, Pakistan

**Final grade:** 3.78/4.00

**Thesis:** Rice Phenology Estimation and Enabling Yield Boosting using Remote Sensing and Drone Imagery

[ 08/2014 – 06/2019 ]

### O/A Levels

***Beaconhouse Margalla Institute (BMI)*** http://bmi-a.com/

**Address:** Pitras Bukhari Rd, H-8/4, 44000, Islamabad, Pakistan

**Final grade:** O Levels - 4 As & A Levels - 3 As 1B

## PUBLICATIONS

[ 2023 ]

### Towards a Benchmark EO Semantic Segmentation Dataset for Uncertainty Quantification

*Dawood Wasif, Yuanyuan Wang et. al. (2023). "Towards a Benchmark EO Semantic Segmentation Dataset for Uncertainty Quantification" IGARSS 2023-2023 IEEE International Geoscience and Remote Sensing Symposium. IEEE, 2023.*

[ 2022 ]

### Extraction of Rice Phenological Metrics Using Temporally Correlated Multispectral Drone Imagery

*Dawood Wasif, Muhammad Qasim Khan, et al. (2022). "Extraction of Rice Phenological Metrics Using Temporally Correlated Multispectral Drone Imagery". In: 16th International Conference on Signal Image Technology and Internet-based Systems. SITIS 2022 (Dijon, France, Oct. 19–21, 2022).*

## PROJECTS

[ 06/2022 – 08/2022 ] **Real-time Parking Occupancy Detection and Tracking System**

- A website made with Flask and Bootstrap for monitoring and analyzing statistics of car in a parking lot with features such as alert generation on car movement, live camera feed of parking lot, etc.

- Car detection using YOLOv5 in parking space and counting numbers of cars detected and car tracking using StrongSORT to generate alert when recognized cars move from its position

**Link:** https://github.com/dawoodalinaqvi/Parking-Monitoring-System

[ 04/2022 – 05/2022 ] **Distributed Semantic Search over Index of U.S. Patents**

- A broker based architecture for a web application on which users can enter a query and find similar patents from our database

- Vector Embeddings are extracted from each patent TF-IDF matrix and they are stored in a FAISS index

- Techniques used such as Topic Modelling with LDA, Query expansion using Knowledge Graphs and document retrieval with LSA and Cosine Similarity Search

**Link:** https://github.com/dawoodwasif/Patent-Search-DC

[ 01/2022 – 03/2022 ]

### Visual Studio Extension for Development Workflow Automation Using Natural Language Generation

- VS Code extension that uses OpenAI Codex and other open source models to automate developer workflow

- Generates, autocompletes, and searches for source code, documentation, and git commit messages

**Link:** https://github.com/zShanCS/openai-autoflow

[ 08/2021 – 11/2021 ] **Content-based Image Retrieval Search**

- Image Search based on metadata tags and k-nearest neighbors algorithm and used Euclidean distance to calculate distance

- Search images in PASCAL-VOC 2012 that are similar to a query image and used 3 layers of Efficientnet-B7 after detailed experimentation and testing and as a feature extractor in PyTorch and Milvus as a vector search database

**Link:** https://github.com/QasimKhan5x/image-search-analysis

## HONOURS AND AWARDS

[ 09/2022 ] **German-Pakistani Research Fellowship** **Awarding institution:** German Academic Exchange Service (DAAD)

Awarded research fellowship of 3800 Euros to conduct a project in enabling smart agriculture at TU Munich

[ 09/2022 ] **Hacktoberfest** **Awarding institution:** GitHub

Successfully completed 4 pull/merge requests due to my willingness to learn, share and contribute to the open-source community

[ 08/2022 ] **Outperforming Intern of the Cohort Award** **Awarding institution:** Neurog

One of the 5 selected interns from more than 1100 applicants after rigorous technical and behavioral tests, out of which won the award for the most outstanding intern due to my dedication and invaluable contribution

[ 04/2022 ] **3rd Place & Crowd Favorite** **Awarding institution:** DevRev Hackathon - Coding with AI

Won the 3rd Place with almost 4000 participants by developing an AI coding assistant for Visual Studio Code using Python and OpenAI Codex and won Crowd Favorite award with over 250+ votes for our project

**GPA Scholarship Awards** **Awarding institution:** School of Electrical Engineering and Computer Science

Awarded scholarship based on highest GPAs for 4 out of 4 semesters consecutively in the department out of almost 1800 students

## HOBBIES AND INTERESTS

### Travelling

I love exploring new places and cultures, and have a particular interest in history and architecture. I have traveled to 9 countries and several cities.

### Volunteer and Social Work

I love helping others and giving back to society which is for the past several months I have been involved in mentoring youth, helping at homeless shelters and participating in environmental conservation initiatives through Bunyaad

### Sports

I play and watch many sports such as football, cricket, tennis and squash, etc. However, I specifically enjoy football due to the strategy, teamwork, and athleticism involved in the game and have also played competitive during my college.