Abrar Ahmed

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EXPERIENCE

Master Thesis ─ Fraunhofer-Institut für Graphische Datenverarbeitung   **Feb 2021 – Jul 2021**
- Devised an opensource SSD line detection algorithm from scratch.
- The algorithm is capable of detecting lines with an accuracy of 93% on general datasets.

Software Engineer (HiWi)─ Fraunhofer-Institut für Graphische Datenverarbeitung   **Feb 2020 – Feb 2021**
- Modelled feature visualization techniques to trace features learned in 14 bat species.
- Ported GAN algorithm in python 3.7.
- Front-end development of image calibration system in Vue.js.

Student Research Assistant ─ Max Planck Institute - Demogr   **Jul 2020 – Mar 2021**
- Handling of large-scale datasets specifically dealing with data quality.
- Data cleaning, management, and implementation of cross validation techniques.
- Statistical analysis and support in the preparation of visualizations and reports.

Werkstudent Software Engineer — Hamburg Port Consulting   **Sep 2019 – Nov 2019**
- Built and automated the pre-processing pipeline for the incoming raw dataset increasing the efficiency of pre-processing by decreasing time consumption by 98.33%.
- Devised ML models from scratch and improved the accuracy of container dwell time classification problem to 98%.

Freelance Software Engineer   **Jul 2014 – Mar 2019**
- Completed 200+ small and big projects by myself.
- Co-founded 3 micro-startups (Axisport Lab, Graphimator & Stitch-In)
- Skill stack ranges from web dev, app dev, designer, animator, content writing, and SEO.

EDUCATION

Universität Rostock, Rostock, Germany   **Oct 2019 – Jul 2021**
Masters in Computer Science (Information systems)

PROJECTS

Real-Time Hand Detection in a Therapeutic Research Scenario (Nov 2019 – Sep 2020, 4-person project, What I did)
- Implemented using Python, OpenCV, and TensorFlow (Keras).
- Supports even a low-edge camera like laptop webcam; accuracy achieved 95%
- Collected 1000+ images, built and tweaked the deep learning model from scratch (technique – transfer learning), and validated + tested the model with 2 different validation methods (confusion matrix and cross-entropy).

Twitter Sentiment Analyzer (Jan 2020 – March 2020, 1-person project)
- Implemented using Python and NLTK. Algorithm approach (Naive Bayes classifier implementing ordinal regression)
- Analyzed and categorized 10,000 tweets based on their sentiments of good, bad, and neutral gestures.

Tracking of Wild Polar Bears with AI (September 2020 – October 2020, 1-person project)
- Implemented using Azure services: virtual camera, Azure Functions, and Azure SQL.
- Trained a supervised machine learning model and created Power BI reports of polar bear detection.

TECHNICAL SKILLS

Programming languages

Python, SQL / NO-SQL, Javascript

Cloud technologies

AWS, GCP, Azure SQL

Data engineering

ETL, Data pre-processing, Data wrangling, Power BI

Machine learning / Computer Vision Skills

Tensorflow / Keras, OpenCV, Numpy, Sci-kit learn, CNN, Classification, Regression, Clustering