

# Nouman Ahmed

SOFTWARE ENGINEER · DATA SCIENTIST

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## Education

### University of Groningen and University of Basque Country

*Netherlands and Spain*

MASTERS IN LANGUAGE AND COMMUNICATION TECHNOLOGIES

*Sep. 2021 - Current*

- Fully-funded double degree program by Erasmus Mundus with degrees in Linguistics and Information Science. Major in NLP Applications
- Courses:** NLP, Deep Learning, Corpus Linguistics, Statistics, Learning from Data

### National University of Science and Technology (NUST)

*Islamabad, Pakistan*

BACHELOR OF SOFTWARE ENGINEERING

*Sep. 2016 - Jun. 2020*

- Courses:** Data Structures & Algorithms, Database Systems, Software Construction, Machine Learning, Software Design & Architecture

## Work Experience

### Matrixian Group

*Amsterdam, Netherlands*

DATA ENGINEER

*Oct, 2021 - Present*

- Built scrapers to collect over 2 million real-estate listings from Europe to be used in company's international home evaluation model
- Developed ETL pipelines for collecting, processing, analyzing, and organizing the data into MySQL while automating it using Airflow
- Tech Stack:** Python, Selenium, Airflow, MySQL **Skills:** Scraping, Cloud, Automation, Data Analysis

### Arbisoft | Project: Sentimeter

*Lahore, Pakistan*

SOFTWARE ENGINEER

*Jul, 2020 - Jul, 2021*

- Developed a React/Django app for analysis & tracking of concerns resulting in 22% faster solve rate.
- Integrated Google Analytics (GA) into the web & mobile app with automated custom daily & weekly reports using GA Reporting API
- Integrated Push notifications in React Native for both iOS and Android with Firebase Messaging Service.
- Integrated Google Single-Sign-on into the web app using react-google-login and django-allauth
- Tech Stack:** Python, JavaScript, Django Rest Framework, React, React Native, Postgres **Skills:** Web and Mobile Development, Data Analysis

### Microelectronic Systems Design Research Group, Technische Universität Kaiserslautern

*Kaiserslautern, Germany*

RESEARCH INTERN

*Jun, 2019 - Sep, 2019*

- Worked on a project for monitoring forests and their change detection in Europe using remote sensing imagery
- Developed an unsupervised forest classification pipeline using deep learning to annotate satellite imagery needed for change detection
- Achieved state-of-the-art results for unsupervised forest region classification - 91% on the test set
- Tech Stack:** Python, Tensorflow, PyTorch, scikit-learn, Microsoft Azure **Skills:** Deep Learning, Unsupervised Learning, Cloud, Computer Vision

### TUCL-NUST, Research and Development Centre, SEECs

*Islamabad, Pakistan*

RESEARCH ASSISTANT

*Jun, 20218 - May, 2020*

- Implemented classic CNNs like AlexNet, VGG-16, and ResNet-34 using PyTorch and tested them on CIFAR-10/CIFAR-100 datasets - [📄 Github](#)
- Achieved an F1 Score of 85% on classification of water bodies on EuroSAT using an unsupervised pipeline with neural networks and clustering
- Awarded with a fully-funded DAAD internship in Germany on the basis of my performance
- Developed unsupervised and semi-supervised pipelines to classify forest regions in satellite imagery - Published the results in IEEE-ICCV 2021
- Tech Stack:** Python, Tensorflow, PyTorch, scikit-learn **Skills:** Deep Learning, Unsupervised Learning, Computer Vision

## Projects

### Building a Question Answering System using Unlabeled Data

[📄 GITHUB](#) | [REPORT](#) | **TECH STACK:** PYTHON, HUGGINGFACE, TENSORFLOW

- Generated Synthetic Question-Answer Pairs from Unlabeled data using a custom QA Generation Model
- Fine-tuned three different QA models which resulted in an F1-score increase from 16.54% to 62.25% by making use of synthetic data

### Unsupervised Classification of Forest Regions Using Deep Learning (Bachelor Thesis)

DEMO | **TECH STACK:** PYTHON (TENSORFLOW, NUMPY, FLASK)

- Developed a system remote sensing forest region classification in an unsupervised way due to lack of annotated data.
- Surpassed state-of-the-art unsupervised classification of forest regions using satellite imagery results, 91% F1 score on EuroSAT dataset.

### Quora Scraper

[📄 GITHUB](#) | [📄 MEDIUM](#) | **TECH STACK:** PYTHON (SELENIUM, DJANGO)

- Developed a Quora Scraper using selenium to automate the login process and scrape questions/answers against any query
- Developed a web app using Django for the scraper

## Publications

**LUAI - IEEE ICCV 2021** Progressive Unsupervised Deep Transfer Learning for Forest Mapping in Satellite Image