

# Mohammad Ammar Mughees

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## EDUCATION

### Master of Science (M. Sc), Geoinformatics Engineering

Politecnico di Milano, Milan, Italy

2023- Present

### Bachelor of Technology (B-Tech), Civil Engineering

Zakir Husain College of Engineering and Technology (ZHCET)

Aligarh Muslim University (AMU)

CPI: 8.7/10

2023

## WORK EXPERIENCE & PROJECTS

### Software Development & AI Projects

#### 1. [PlanetScope-py](#) – Professional Python Library for Satellite Imagery Analysis May 2025 – Jul. 2025

- Developed a Python library for PlanetScope satellite imagery analysis with spatial-temporal density algorithms.
- Built with NumPy, GeoPandas, Rasterio for large-scale geospatial processing and GIS software compatibility.
- [GitHub](#) | [PyPI](#) | [Docs](#)

#### 2. [Portfolio Website](#) Development (Nuxt.js & Vue.js). Apr. 2025 – Present

- Developed a dynamic portfolio website with custom admin dashboard using Nuxt.js and Vue.js.
- Integrated Supabase for authentication and database management with real-time content updates.
- Implemented responsive design with Tailwind CSS and GDPR-compliant analytics.

#### 3. [Mobile Application](#) Development (Flutter & Firebase) Sept. 2024 – Feb. 2025

- Developed a cross-platform mobile application using Flutter.
- Implemented Firebase backend for seamless data management.
- Link to GitHub repository: [Fresh Flow](#)

#### 4. [Histogram Manipulation](#) Python Library Oct. 2024 – an. 2025

- Developed a Python library for geospatial raster enhancement with histogram manipulation techniques.
- Built with Rasterio and NumPy for processing multi-band satellite imagery with spatial metadata preservation.
- Published open-source package on [PyPI](#) with documentation and visualization tools. | [GitHub](#)

#### 5. [CNN Models](#) for AI Applications. Nov. 2024 – Dec. 2024

- Developed CNN-based models for Blood Cell Classification and Mars Terrain Segmentation.
- Leveraged TensorFlow for efficient model training and deployment.

#### 6. [Website](#) with Integrated AI Chatbot Feb. 2024 – July 2024

- Built an interactive website using Nuxt.js & Vue.js.
- Integrated an AI chatbot based on GPT-3.5 Turbo.
- Link to GitHub repository: [WebWizard GitHub Repository](#)

#### 7. [AUPE RiskMonitor](#) – Landslide Risk Analysis Software Feb. 2024 – July 2024

- Developed Python-based risk analysis software for landslide monitoring.
- Utilized AWS relational database based on PostgreSQL with PostGIS extension.
- Link to GitHub repository: [AUPE GitHub Repository](#)

### Civil Engineering & Research Projects

#### 8. [Stability Analysis](#) of a Transmission Tower Foundation (Thesis) Aug. 2022 – May 2023

- Conducted static and seismic analysis of a transmission tower foundation.
- Performed finite element analysis using ABAQUS.

#### 9. Publication: [Stability Analysis of Slope with Transmission Tower](#) January 2024

- Modeled soil-structure interaction of a combined footing in a half-space soil domain.
- Conducted finite element analysis using ABAQUS/Standard solver.

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## SKILLS

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- **Software:** QGIS, ArcGIS, Abaqus, STAAD.Pro, AutoCAD, MS Office.
  - **Technical Skills:** [GitHub](#), Python, TensorFlow, C and C++, Java, HTML, CSS 3, Dart.
  - **Artificial Intelligence:** CNNs, AI Prompting, AI Model Development.
  - **Databases & Cloud:** Firebase, PostgreSQL (PostGIS), AWS
  - **Communication Languages:** English (Fluent), Urdu/Hindi (Native).
  - **Soft Skills:** Teamwork, Problem Solving, Communication, Critical Thinking, Time Management.
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## WORKSHOPS and TRAINING

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- 1. Startup Bootcamp | Politecnico di Milano** April 2025  
Completed 5-module entrepreneurship bootcamp on innovation technologies and market strategy.  
Developed skills in valorisation strategies and startup development methodologies.
  - 2. Disaster Management Training | AMU & NIDM** 22<sup>nd</sup> – 24<sup>th</sup> Nov. 2022  
Department of Civil Engineering | Ministry of Home Affairs, Govt. of India
  - 3. Wastewater Treatment using SBR Technology** 28<sup>th</sup> Sept. 2022  
Attended a conference on Wastewater Treatment using Sequencing Batch Reactor (SBR) Technology.  
Organized by the Department of Civil Engineering, AMU Aligarh, under the PAVITR Research Project.
  - 4. Planning and Designing of RCC Building using Software** 18<sup>th</sup>-22<sup>nd</sup> Oct. 2021  
Department of Civil Engineering | MMANTC Mansoor Malegaon
    - Gained Knowledge about AutoCAD, Planning of G+2 Building
    - Gained Knowledge about ETab Software, Overview of structural analysis and design
    - Gained Knowledge about SketchUp Software
  - 5. Professional Training (Self-Paced) on Open-Source Tool: SCILAB** 26<sup>th</sup> Sept. 2020 to 9<sup>th</sup> Oct. 2020  
Department of Electronics Engineering | ZHCET | AMU  
Spoken Tutorial Project, IIT Bombay
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## INTERNSHIPS

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- 1. Project Intern at Solar Power Plant** 22<sup>nd</sup> Feb. – 23<sup>rd</sup> Mar. 2022
    - Analyzed energy transmission processes and optimized power efficiency in a 3MW solar plant.
  - 2. Artificial Intelligence Internship (Internship Studio)** 5<sup>th</sup> Jan. – 9<sup>th</sup> Feb. 2022
    - Completed 5 weeks of internship in Artificial Intelligence with the title of "German to English Language Translation" at Internship Studio.
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## EXTRA-CURRICULARS

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- 1. Buddy Project Mentor | Politecnico di Milano** Aug. 2024 – Jan. 2025
    - Mentored two international students through university integration and earned Open Badge certification for positive feedback.
  - 2. Worked with an NGO called "SOCH ...beyond the Imagination"** Apr. – Sept. 2020
    - Worked with an NGO called "SOCH ...beyond the Imagination" and was appointed as the On Field in-charge of COVID-19 relief management for the SOCH Foundation (NGO).
  - 2. Coordinator at IIC-ZHCET Club** Nov. 2019 – Nov. 2021
    - Organized multiple events and held the post of coordinator in the ICC-ZHCET club.
  - 3. National Engineering Olympiad 5.0 – AIR 96**
    - Secured All India Rank (AIR) 96 in the National Engineering Olympiad 5.0.
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## CERTIFICATIONS & MOOCs

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- Programming for Everybody (Python) – University of Michigan
- Python Data Structures – University of Michigan