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Aashan Javed

Nationality: Pakistani **Date of birth:** 11/10/2003

Place of birth: Rawalpindi, Pakistan **Gender:** Male

Phone number: (+971) 553803887

Email address: aashanjaved567@gmail.com

WhatsApp Messenger: +971 55 380 3887

LinkedIn: https://www.linkedin.com/in/aashan-javed/

Github: https://github.com/Aashan47

Website: aashanjaved.com

ABOUT ME

Machine learning engineer focused on geospatial modeling and climate informatics, with experience building 2 m large temperature models at 10 m resolution, deploying ML APIs, and running research-style experiments for urban climate intelligence. Research interests include Machine Learning, Generative AI, Geospatial Modeling, Climate Informatics, and Large-scale Forecasting Systems.

WORK EXPERIENCE

FortyGuard – Abu Dhabi, United Arab Emirates

City: Abu Dhabi | **Country:** United Arab Emirates

Machine Learning Engineer (Research and Development)

[01/01/2025 – Current]

- Researching large-scale temperature forecasting for urban climate intelligence.
- Designing diffusion-based models to predict 2 m temperatures at 10 m resolution.
- Integrating multi-source geospatial data (satellite, stations, IoT) for robust training.

FortyGuard – Abu Dhabi, United Arab Emirates

City: Abu Dhabi | **Country:** United Arab Emirates

Software Engineer (Machine Learning) - Internship

[27/05/2024 – 31/12/2024]

- Automated temperature data processing pipelines by integrating frontend dashboards with ML-driven backend APIs, boosting
- analytics efficiency by 20%.
- Implemented caching and query optimization that reduced response time by 40%, enabling faster real-time climate insights.
- Optimized the MLOps pipeline, slashing deployment time 35% and enabling 3x faster model releases.

Payactiv – Islamabad, Pakistan

City: Islamabad | **Country:** Pakistan

Machine Learning Engineer - Internship

[22/06/2023 – 22/09/2023]

- Developed fraud anomaly detection models; improved precision by 22%.
- Explored LLM-based scoring methods for risk analytics.

EDUCATION AND TRAINING

Bachelor of Science in Computer Science (BSCS)

National University of Computer and Emerging Sciences (FAST), Islamabad, Pakistan [09/2020 – 06/2024]

City: Islamabad | **Country:** Pakistan | **Website:** https://isb.nu.edu.pk/ | **Final grade:** Gold Medalist | Rector's List of Honor | **Level in EQF:** EQF level 6 | **Thesis:** Optimized ASL Real-time Sign Language Communication System

- Computer Science fundamentals: Algorithms, Data Structures, Operating Systems, Databases
- Machine Learning & Artificial Intelligence: supervised/unsupervised learning, deep learning, model deployment
- Software Engineering: full-stack development, system design, agile practices
- Data Systems: SQL/NoSQL databases, big data frameworks, data pipelines
- Programming & Development: Python, Java, C++, Web technologies (Angular, React)
- Applied projects: climate intelligence models, fraud detection systems, real-time sign language recognition

ONGOING RESEARCH PROJECTS

Urban Climate Forecasting at 2m level with Diffusion Models

Developing diffusion-based generative models for high-resolution urban temperature forecasting at 2 m level. Currently benchmarking against baseline models for urban heat mapping and validating results with observational data.

PUBLICATIONS

AlphaEarth Climate Monitoring System: High-Resolution Climate Monitoring with Foundation Models (Pre Print)

Short: Foundation model embeddings for 10 m climate insights, with similarity search and change detection for urban tiles.

Contributor: Ammar Altaf

Authors: Aashan Javed | **Publisher**: Zenodo

Link: https://zenodo.org/records/17113151

[2025]

Budget-Aware Fraud Detection with Label Delay: Stable Top-K Decisioning with Conformal Guarantees (Pre Print)

Short: Decision layer that keeps top-K alerts stable under label delay and drift. I built the streaming evaluation and conformal calibration.

Contributor: Ammar Altaf

Authors: Aashan Javed | **Publisher**: Zenodo

Link: https://zenodo.org/records/17113194

[2025]

Decoding Coarse Climate Variables to 10 m Using Geospatial Foundation Embeddings. (Pre Print)

Short: Downscales coarse climate fields into 10 m maps using foundation embeddings, aimed at city-scale planning.

Contributor: Ammar Altaf

Authors: Aashan Javed | **Publisher**: Zenodo

Link: https://zenodo.org/records/17113210

PROJECTS

AlphaEarth Climate Monitoring System

- Integrated DeepMind's AlphaEarth foundation model with geospatial pipelines to deliver 10 m climate insights.
- Enabled scalable temperature prediction, similarity search, and change detection for urban planning.
- Improved satellite-based anomaly-detection accuracy by ~17% versus baseline.

Link: https://github.com/Aashan47/AlphaEarth-Climate-Monitor-

Fraudulent Transaction Detection System

- Engineered pipeline (Python, scikit-learn, SMOTE, boosting) achieving ~94% F1 on an imbalanced banking dataset.
- Reduced false negatives by ~23% vs baseline, minimising undetected fraud risk.
- Benchmarked on public, Kaggle-style datasets to test robustness.

Link: https://github.com/Aashan47/Fraudulent-Transaction-Detection-System

Real-time Sign Language Communication System

- Designed ASL-to-text translation system (OpenCV, TensorFlow) with 90%+ accuracy across 25+ gestures.
- Enabled real-time communication at sub-200ms latency, enhancing accessibility for hearing-impaired users.
- Extended model to sentence structuring, improving usability beyond isolated gestures.

Link: https://github.com/Aashan47/Real-time-Sign-Language-Communication-System

Legal Document Assistant

- Built NLP assistant (spaCy, Transformers, Flask) to automate clause extraction, summarization, and legal Q&A.
- Integrated Retrieval-Augmented Generation (RAG), boosting contextual response accuracy by 21%.
- Reduced manual document review time by an estimated 35% in simulated legal workflows.

Link: https://github.com/Aashan47/Legal-Document-Assistant

SKILLS

Technical Skills

Docker / NoSQL / PyTorch / Python / scikit-learn / FastAPI / Kafka / React / Angular / SQL / Geospatial ML expertise / A zure / TensorFlow / Supervised/unsupervised learning / CI/CD / AWS / Kubernetes / QGIS / generative models (diffusion, transformers) / Deploying ML APIs in production / deep learning / LangChain / Latency and cost optimisation / Airflow / Spark / Google Earth Engine / Earth observation (satellite imagery, ERA5/ERA5-Land)

Research Skills

experimental design / reproducible pipelines / statistical inference / Structuring research papers / LaTeX / Overleaf / Statistical modeling / Hypothesis testing / writing abstracts / collaborative coding platforms / matplotlib/Plotly / adva nced reporting in Jupyter / exploratory data analysis / producing figures/visualizations for publications

Transferable Skills

collaborative research projects / balancing engineering and scientific goals / Tackling open-ended research questions / Sprint planning / Helping peers with reproducibility practices. / prototyping novel approaches under uncertainty / Mentoring interns on data pipelines

HONOURS AND AWARDS

National University of Computer and Emerging Sciences (FAST)

Rector's List of Honors

Awarded for outstanding academic performance during undergraduate studies; top-performing students across the cohort are recognized.

International Cricket Council (ICC)

Runner's Up — ICC Cricket Hackathon (India)

Finalist in an international hackathon organised by the International Cricket Council; developed a data-driven solution for cricket analytics, placing in the top ranks among global teams.

Youth For Pakistan

Campus Ambassador

Represented the national youth organization on campus; promoted student engagement, coordinated events, and supported social impact campaigns.

FAST Community Service Society

Head of Information and Communication Department

Led communications and information management for the university's community service society; organized volunteering drives and outreach programs.

Alkhidmat Foundation Pakistan

Digital Volunteer

Contributed remotely to digital awareness and volunteer campaigns, supporting humanitarian projects in education, health, and disaster relief during the 2022 floods in Pakistan

Google Cloud Community Pakistan

Member

Active member of the national Google Cloud developer community; participated in knowledge-sharing events, workshops, and networking for cloud technologies.

CERTIFICATIONS

[07/2023]
Machine Learning Specialization — Stanford Online
Link: https://www.coursera.org/account/accomplishments/specialization/LFXZ8PXH4JGW?utm_source=link&utm_medium=certificate&utm_content=cert_image&utm_campaign=sharing_cta&utm_product=s12n

[01/2024]
IBM Data Science Specialization — IBM
Link: https://www.coursera.org/account/accomplishments/specialization/8AS6VUNX6BFW

[08/2023]
Google Data Analytics — Google
Link: https://www.coursera.org/account/accomplishments/specialization/certificate/VAB5L2ER92E5

[01/2024]
Microsoft Azure Fundamentals — Microsoft
Link: https://learn.microsoft.com/api/credentials/share/en-us/AashanJaved-7987/831A7403B7442E7A?sharingId=873776FDA2072D9E

[04/2024]
AWS Academy Graduate - AWS Academy Microservices and CI/CD Pipeline Builder
Link: https://www.credly.com/badges/7287dd67-7e90-42b3-a9be-ed33d2c82431/linked_in_profile

LANGUAGE SKILLS

Mother tongue(s): Urdu

Other language(s):

English
LISTENING C1 **READING** C1 **WRITING** C1
SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

German
LISTENING A1 **READING** A1 **WRITING** A1
SPOKEN PRODUCTION A1 **SPOKEN INTERACTION** A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user