Inayat Rahim

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Education

Szabist university Islamabad **Islamabad**

Bachelor of Science (B.S) Artificial intelligence *2023- 2027*

- GPA: 3.64

Experience

ML Intern **Virtual**

ARCH Technologies *2022 - 2024*

- Designed and deployed a lightweight segmentation pipeline using Segment Anything (SAM) to label geospatial satellite images for an environmental monitoring tool.
- Collaborated with researchers to build GNN-based models predicting gene-disease relationships using biomedical graph datasets and omics data.
- Developed custom preprocessing scripts and feature extractors for protein interaction datasets using RDKit and Py3Dmol, improving inference efficiency.
- Maintained model versioning and experiment tracking across multiple domains using Hugging Face Hub and Weights & Biases.

Projects

Satellite Image Segmentation with SAM & GroundingDINO **(Sep 2024 - Nov 2024)**

- Description: Built a real-time Earth observation model to segment environmental changes
- Role: Integrated Segment Anything (SAM) and used GeoContrast embeddings for geospatial understanding
- Technologies Used: Meta SAM, Hugging Face Transformers, GeoContrast, PaddleRS, PyGeoTools, Gradio

Bio-AI Model for Disease Gene Prediction **(Feb 2025 – April 2025)**

- Description: Trained an open-source model to predict disease-gene associations from biomedical knowledge graphs and omics data.
- Role: Graph construction, GNN modeling, and embedding analysis.
- Technologies Used: PaddleHelix, BioBERT, DGL (Deep Graph Library), OpenBioLink, Neo4j

Protein-Protein Interaction Predictor with OpenFold + BioNeMo **(Mar 2025 – Apr 2025)**

- Description: Predicted molecular interactions from raw sequence data and 3D folding predictions.
- Role: Integrated OpenFold with NVIDIA BioNeMo APIs for inference and visualization.
- Technologies Used: BioNeMo, OpenFold, UniProt, RDKit, Py3Dmol, PaddleHelix

AI for Earth & Space – Satellite Image Analysis & Forecasting **(May 2025 – June 2025)**

- Description: Built spatiotemporal AI models for climate, weather, and disaster prediction using Earth observation datasets
- Role: Hands-on with Earthformer, FastSAM, GeoContrast, and PaddleRS.
- Technologies Used: Segment Anything (SAM), GeoContrast, PaddlePaddle, Earthformer, Sentinel Hub API

AI-Driven Early Wildfire Detection with Satellite & Multispectral Imagery **(June 2025 – Ongoing)**

- Description: Developed a real-time system for early wildfire detection using satellite and thermal imagery analysis.
- Role: Integrated object detection with time-series forecasting to detect smoke plumes and vegetation stress.
- Technologies Used: YOLOv8, Segment Anything (SAM), Earthformer, Sentinel Hub API, PaddleRS, OpenCV, Gradio

Certification

Transformers & Multimodal AI – Hugging Face Advanced Track **(Feb 2025)**

- Fine-tuned state-of-the-art transformer models (ViT, CLIP, Owl-ViT, Bark) across vision, language, audio
- Covered advanced topics: AdapterFusion, LoRA, quantization, and cross-modal retrieval
- Tech Used: PyTorch, Hugging Face Transformers, Datasets, Spaces

AI for Scientific Discovery – DeepMind & AI4Science (Unofficial Open Curriculum) **(May 2025)**

- Applied AI to solve scientific problems in biology, chemistry, and materials science
- Used AlphaFold 3, BioNeMo, OpenFold, and Galactica for protein folding, bio-interactions, and paper summarization
- Tech Used: PaddleHelix, BioBERT, BioNeMo, DGL, RDKit, Hugging Face, Py3Dmol

Geospatial AI & Earth Analytics – Satellite Vision Lab **(June 2025)**

- Learned to process and analyze satellite, hyperspectral, and multispectral imagery for environmental monitoring and forecasting.
- Trained AI models for wildfire detection, deforestation mapping, and crop stress analysis using satellite time-series data.
- Tech Used: Sentinel Hub, PaddleRS, Earthformer, Segment Anything (SAM), OpenCV

Additional

Technical Skills:
Python, PyTorch, Hugging Face Transformers, PaddlePaddle, PaddleHelix, PaddleRS, Earthformer, SAM, GroundingDINO, DGL, GeoContrast, BioNeMo, AlphaFold, RDKit, Py3Dmol, Streamlit, Gradio

Academic Achievements:
• Microsoft Learn Student Ambassador (MLSA) – Beta Tier
• Selected Participant – Cohere Lab Summer School on NLP, Cutting Edge Multi Disciplinary Transformers Advanced Generative AI
• Awarded $1,000 in Azure Credits – Microsoft for Startups Founders Hub
• Received Cloud AI Credits – OpenAI, GitHub Copilot, Notion, Miro, and more
• Aspire Leaders Program – Led by Harvard Business School (2025 Cohort)

Volunteer Experience:
• Organized and led Python and AI workshops at university and community level.
• Mentored students in AI project building, research, and tech career pathways.
• Contributed to open-source AI models, tools, and learning platforms; developed educational AI notebooks and supported community-driven projects across multimodal, geospatial, biomedical, and computer vision domains.

References:
• Available upon request.