

Ahsan Bilal

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EDUCATION

University of Oklahoma

MS in Computer Science

Oklahoma, USA

Sep. 2024 – May 2026

- CGPA – 3.8/4.0

- Advisor: [Dr. Dean Hougen](#) | Research includes Deep Learning, Reinforcement Learning, & LLMs

- Research Focus: Deep learning for optimization, with emphasis on theoretical foundations and robust LLM reasoning models. Currently exploring reinforcement learning approaches to enhance structured decision-making and interpretability in large language models at scale.

National University of Sciences & Technology (NUST - SEECS)

Bachelors of Engineering in Electrical Engineering

Islamabad, Pakistan

Aug. 2020 – June 2024

- CGPA – 3.66/4.0 | Specialization GPA – 4.0/4.0 | Merit Scholarship 2020

- Person identification using gait with fused graph and 3D-convolutional architectures | [Presentation](#) |

PUBLICATIONS | [GOOGLE SCHOLAR](#)

ITDPDM: Information-Theoretic Discrete Poisson Diffusion Model

NeurIPS'25

S. Bhattacharya, A.R. Gorle, [A. Bilal](#), C. Ding, A.K.S. Yadav, T. Weissman

On the Fundamental Limits of LLMs at Scale

(Submitted) TMLR'26

A. Mohsin, [A. Bilal](#), W. Zhao, M. Umer, and Researchers from DeepMind and Meta

Neural Gaussian Radio Fields for Channel Estimation

(Submitted) ICLR'26

M. Umer, M.A. Mohsin, [A. Bilal](#), J.M. Cioffi

Channel Prediction Under Network Distribution Shift Using Continual Learning-Based Loss Regularization

(Submitted) ICASSP'26

M.A. Mohsin, M. Umer, [A. Bilal](#), M.I. Qadir, M.A. Jamshed, D.F. Hougen, J.M. Cioffi

Conditional Prior-Based Non-Stationary Channel Estimation Using Accelerated Diffusion Models

(Submitted) ICASSP'26

M.A. Mohsin, [A. Bilal](#), M. Umer, A. Ali, M.A. Jamshed, D.F. Hougen, J.M. Cioffi

Transformer-Based Sparse CSI Estimation for Non-Stationary Channels

(Submitted) ICC'26

M.A. Mohsin, M. Umer, [A. Bilal](#), H. Rizwan, S. Bhattacharya, M.A. Jamshed, J.M. Cioffi

Continual Learning for Wireless Channel Prediction

ICML'25

M.A. Mohsin, M. Umer, [A. Bilal](#), M.A. Jamshed, J.M. Cioffi

Task Aware Distributed Source Coding for Correlated Audio Signals Using Perceptual Loss

AAAI'25

S. Bhattacharya, M.A. Mohsin, [A. Bilal](#), J.M. Cioffi

Retrieval Augmented Generation with Multi-Modal LLM Framework for Wireless Environments

ICC'25

M.A. Mohsin, [A. Bilal](#), S. Bhattacharya, J.M. Cioffi

HDRL for Spectrum Resource Optimization in Integrated Terrestrial and Non-Terrestrial Networks

AAAI'25

M.A. Mohsin, H. Rizwan, M. Umer, S. Bhattacharya, [A. Bilal](#), J.M. Cioffi

Abstract – LLM for Explainable AI

IEEE DSAA'24

[A. Bilal](#), B. Lin

Meta-Thinking in LLMs via Multi-Agent Reinforcement Learning: A Survey

(Submitted) IEEE TAI

[A. Bilal](#), M.A. Mohsin, M. Umer, M.A.K. Bangash, M.A. Jamshed

On Shadow Removal With Boosted Attention in a Vision Transformer

(Submitted) Springer ML

[A. Bilal](#), A. Salman, S.S. Naveed, M.U. Safder, K. Khurshid, M.U. Ilyas

Person Identification using Gait with Fused Graph and 3D-Convolutional Architectures

(Submitted) ACM TAIS

[A. Bilal](#), A. Subhan, H. Ali, A. Salman

INDUSTRY EXPERIENCE

Machine Learning Engineer

Cowler Design Studio (Y Combinator 21) – Based in USA

Islamabad, PK

Feb 2024 – August 2024

- Developed an Action Recognition system for Smart Carts with 95% accuracy, built dual inference deployment for edge devices and Nvidia cluster. Automated fiber cable alignment using computer vision and machine learning with 96% success, improving precision to 5 micrometers and scaling production 40x.

UI Developer

SJCurve – Remote

Dubai, UAE

March 2023 – August 2024

- Created responsive web applications using WordPress and React.js, customized themes, integrated frontend with backend, and collaborated with teams to implement modern UI trends.

UX/UI Designer

Meraki-IT – Remote

Wah Cantt, Pakistan

Nov 2022 – Mar 2023

- Led UI/UX design for multiple projects, analyzing problem statements, designing intuitive interfaces, and developing wireframes and prototypes for the technology sector.

TEACHING EXPERIENCE

Teaching Assistant

CS-1313: Programming for Non-majors in C

University of Oklahoma

Fall 2024 – Present

- Teaching Assistant under the supervision of **Dr. Neeman**, where I designed and developed weekly lab assignments, handled grading with clear rubrics and constructive feedback, and led help sessions to support students with course material and programming challenges. I also coordinated closely with the instructor to ensure labs aligned with lecture topics and to provide guidance that improved students' understanding and performance.

TALKS AND PRESENTATIONS

- Delivered a presentation titled "**AI in Healthcare**" at Norman Regional Hospital under the supervision of **Dr. Lubna Mirza**

HONORS AND AWARDS

- * Best Student Presentation **Runner-up** Award at **IEEE DSAA'24** Student Forum.
- * Recipient of the **Gallogly College of Engineering Graduate Fellowship 2025**
- * Awarded **Best Paper** at the **ICC Workshop 2025** in Montreal.
- * Awarded the **Student Travel Grant** for **IEEE DSAA 2024** in San Diego.
- * My Final Year Project received the **1st Best Adjudged Industrial Project Award** at the **NUST Open House 2024**.
- * Selected as an Undergraduate Research Intern for the First Cohort of UGRIP by MBZUAI.
- * Winner of **Prime Minister Laptop Scheme**.

CERTIFICATIONS

- * Google UX Professional Certificate.
- * Deep Learning Specialization Certificate.
- * The Advanced Communication Skills Course.

SKILLS

Programming & Deep Learning: PyTorch, Tensorflow (Keras), OpenCV, Docker, Mlflow, EC2 Instance

Languages: Python, C/C++, Embedded C, Javascript (React.js), HTML/CSS, Next.js

Tools: MATLAB, VS Code, Git, AutoCad, Figma, PyCharm, Raspberry Pi OS, NginX

Design: Figma, Adobe XD, Adobe Illustrator, Adobe Photoshop, Sketch, WordPress Theme Design