Bilal Ahmed

West Lafayette,IN

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Graduate research assistant working on auditory cortex modelling using deep learning models

EDUCATION

Purdue University **Aug 2021 – Present**
Ph.D. Electrical & Computer Engineering *West Lafayette, IN*

University of Engineering & Technology Lahore **Jun 2015**
B.Sc. Electrical Engineering (with Honours) *Lahore, Pakistan*

WORK EXPERIENCE

Purdue University **Aug 2021 – Present**
Graduate Research Assistance ***West Lafayette, IN***

Modelling auditory cortex using speech-recognition deep learning model.

- Trained CNN based speech-to-text model using up to 8 GPU's.
- Dataset used for speech model: LibriSpeech (960 Hrs.).
- Working with Neural data recorded from auditory cortex of macaque monkeys.

Fauji Fertilizer Company Limited, Pakistan **Sep 2015 – Jul 2021**
Deputy Executive - Instrumentation & Control ***Pakistan***

Worked in different roles as Automation Engineer at the manufacturing facility. During this period, I led the teams of up to **8 technical staff** employees for tasks including:

- Preventive maintenance at utilities plant, leading a team of **7 staff members.**
- Team lead for maintenance of gas turbine (Solar Turbines).
- Carried out system upgrades and reliability enhancement projects.
- Upgraded speed governor at steam turbine that resulted in **8 % efficiency enhancement.**
- Led the instrumentation team for maintenance activities during annual turnaround.
- Led the fire fighting squad of E&I department to victory, during annual competition.

AL-KHAWARAZMI INSTITUTE OF COMPUTER SCIENCE **Jul – Sep 2014**
Research Intern ***Lahore, Pakistan***

Worked on development and installation of solar reflectors at heliostat power plant. Tasks involved in the project included:

- PCB design
- soldering and electrical testing
- Programming microcontroller using C language

PUBLICATIONS

Deep Neural Networks Explain Single-Cell Activity in Auditory Cortex. *(Manuscript submitted to NeurIPS-2023)*

CONFERENCES

COSYNE 2023 **Mar 9-12 2023**
Poster: Understanding Auditory Cortex with Deep Neural Networks. *Montreal, Canada*

SKILLS

Programming: Python, C, MATLAB
Deep Learning Frameworks: Pytorch, Scikit-learn, Pytorch-lightning (multi-GPU training)
Frequently Using: Numpy, Scipy, Pandas, Matplotlib

Online Courses

Sequence Models - Coursera	Jan 2022
Neural Networks & Deep Learning - Coursera	Feb 2021
Python Bootcamp 2020 - Udemy	Jun 2020
AI for Everyone - Coursera	May 2020
Machine Learning by Stanford University - Coursera	Sep 2019

Awards

National ICT R&D Scholarship (fully-funded for BS(EE))	2011 – 2015

Volunteering

Career Counselling to school children of rural areas (hometown) in Pakistan.	2015 – 2020

ACTIVITIES/HOBBIES

Reading: Investing, Economy, Business
Sports: Cricket, Badminton