

# Mohammad Faraz Idris Siddiqui

Linkedin: <https://www.linkedin.com/mohammad-faraz/>

Leetcode: <https://leetcode.com/feedme007/>

Email : farazir786@gmail.com

Mobile : +91-759-930-0680

## RESEARCH INTERESTS

Artificial Intelligence, Machine Learning, Deep Learning, Decision-Making, Data Science, Data Mining, Sustainable Development, Urban Mobility, Complex Network Analysis

## EDUCATION

- Jamia Millia Islamia University (India's 3<sup>rd</sup>-ranked University)** New Delhi, India  
*Bachelor of Technology - Computer Engineering; GPA: 3.68/4.0 (Top 2% of 400+ students)* Nov 2021 - Jun 2025

## SKILLS SUMMARY

- Languages:** Python, C, JAVA, Javascript, C++, SQL, Bash scripting, LaTeX
- Frameworks:** Pandas, NumPy, SpaCY, Scikit-Learn, Matplotlib, TensorFlow, Keras, Pytorch, NLTK
- Tools:** Git, VSCode, Jupyter, Google Colab, Nominatim, QGIS, SUMO, AutoCAD, MATLAB, OSM
- Soft skills:** Teamwork, Communication, Literature Review, Report Writing, Problem Solving

## EXPERIENCE

- Research Intern (World's Top 1% University)** London, Ontario, **Canada**  
*Department of Electrical and Computer Engineering, Western University - Dr. Yili (Kelly) Tang* Sept-2024 - Present
  - Predictive Model for Forecasting Subway Delays (Currently working) (Link):**
    - Developing a predictive AI model to forecast subway delays using real-time Toronto subway data & Google Maps API.
    - Designing visualizations for dynamic passenger flows, occupancy & crowd analysis to optimize urban transit systems.
- Summer Research Intern (On-site) (MITACS GRI)** London, Ontario, **Canada**  
*Department of Electrical and Computer Engineering, Western University - Dr. Yili (Kelly) Tang* Jun-2024 - Aug-2024
  - Development of an Agent-Based Simulation Model and Advanced Data Visualization:**
    - Developed an agent-based simulation model for urban transit monitoring in cities like Beijing, London, and Toronto.
    - Analyzed passenger behavior and system changes using smartcard and GTFS data during real-world disruptions.
    - Simulated complex transit network dynamics to optimize operations and infrastructure utilization. (Link)
- Research Intern (On-site) (India's 3<sup>rd</sup>-ranked University)** New Delhi, India  
*Department of Computer Engineering, Jamia Millia Islamia - Dr. Saif Ali* Feb-2023 - Jun 2024
  - Social Media Crowdsourcing for Traffic Congestion Management (Link):**
    - Developed a syntactical geocoder to map traffic congestion-related tweets to routes instead of isolated points.
    - Created an ontology of geometric configurations & utilized network centrality measures to optimize urban traffic flow.
    - Applied AI-driven data analysis, resulting in more accurate traffic predictions for New Delhi's traffic management.
    - Provided policy-relevant insights at CSIR-CRRI (Link) and paper under review at a Taylor & Francis Journal. (Link)
- Guest Lecturer (On-site) (Asia's Top 2% University)** Putrajaya, **Malaysia**  
*Department of Computing (CCI), Universiti Tenaga Nasional (UNITEN)* Oct-2023 - Oct 2023
  - Ethical AI for Next Generation Technologies (Link):**
    - Collaborated with Dr. Lim Kok Cheng and UNITEN faculty to promote ethical AI practices in academia and industry
    - Delivered lectures on "Green Computing: AI at Scale" & "AI for Real-World" to UNITEN students and global attendees.
- Summer Research Intern (On-site) (61<sup>st</sup>-ranked govt. institution worldwide)** New Delhi, India  
*Transport Planning and Environment Division, CSIR-CRRI - Dr. Mukti Advani (Government Project)* Aug-2023 - Oct 2023
  - Traffic Simulation and Technology-Driven Solutions for Traffic Management at Shalimar Chowk, Delhi :**
    - Modeled and simulated roundabout designs at Shalimar Chowk, Delhi, using SUMO software to optimize traffic flow.
    - Evaluated traffic scenarios and optimized lanes, signals, and roundabout impacts using AI-driven simulations. (Link)
    - Published paper in an international journal (*IF=8.226*), resulting in a projected 25% reduction in congestion. (Link)
- Research Intern (On-site) (India's 3<sup>rd</sup>-ranked University)** New Delhi, India  
*Department of Computer Engineering, Jamia Millia Islamia - Dr. Musheer Ahmad* Feb-2023 - Aug 2023
  - An Efficient Heart Disease Detection Using Customized Deep Learning Network (Link):**
    - Built 1D-CNN and LSTM models to predict heart disease using key indicators like age, blood pressure, and cholesterol.
    - Optimized deep learning models through hyperparameter tuning, achieving 99.02% accuracy and a ROC-AUC of 99%.
    - Paper under review at an Elsevier journal. (Link)
- Subject Expert (Global EdTech Leader)** New Delhi, India  
*Chegg India Private Limited* May-2022 - Present
  - Assisted 500+ students globally with solutions to undergraduate-level questions in Mathematics & Chemistry. (Link)
- Academic Specialist (India's #1 EdTech Company)** New Delhi, India  
*Byju's, Think & Learn Pvt. Ltd.* Mar-2022 - Oct 2022
  - Managed 4 classes of 40 students each, teaching Mathematics and Science to improve conceptual understanding. (Link)

# PROJECTS

- **Multiple Disease Prediction Streamlit App:**  
-Developed a user-friendly Streamlit interface for predicting diabetes, heart disease, and Parkinson's using input values.
- **Enhancing Public Transportation Systems through Occupancy Monitoring (SIH 23):**  
-Developed a cost-efficient, real-time bus occupancy monitoring system, using OpenCV for Delhi's public transportation.  
-Integrated the system with mobile and web platforms to provide live passenger count data, improving commuter experience.
- **AI-Driven Metro Infrastructure and Operations Analysis for Delhi Subway (Government Project):**  
-Built an agent-based simulation model to manage crowds on Delhi's Magenta Line, serving 500,000 daily passengers.  
-Analyzed transit dynamics using GTFS & synthetic OD data to enhance proactive decision-making in urban transit systems.
- **AI-Analysis of Water Conservation Structures for Socio-Economic Development (Central Government Project):**  
-Processed daily soil moisture data for India's 5,969 sub-districts to evaluate the impact of farm ponds on agricultural productivity.  
-Applied data analysis and predictive modeling to analyze climate & LULC data and assess socio-economic benefits.

# PUBLICATIONS & PREPRINT

C=CONFERENCE, J=JOURNAL

- [J.3] **Geo-coding of Traffic Congestion-Related Social Media Texts on a Complex Network** (2024). Manuscript under review in *International Journal of Geographical Information Science* (Taylor & Francis)
- [J.2] **An Efficient Heart Disease Detection Using Customized Deep Learning Network** (2024). Manuscript under review in *Journal of King Saud University - Computer and Information Sciences* (Elsevier).
- [J.1] **The Influence of Traffic Mix on Traffic Efficiency: An In-Depth Examination** (2024). *International Research Journal of Engineering and Technology (IRJET)*, Vol. 11, Issue 03, pp. 1265-1273. e-ISSN: 2395-0056, p-ISSN: 2395-0072
- [C.1] **Optimized Feature Selection Framework for Efficient Heart Sound Classification** (2024). Manuscript accepted for publication in *Advancing Technology for Sustainable Development (IEEE Xplore)*, DELCON-2024, ISBN 978-93-80544-57-1, IEEE Conference ID:64804
- [C.2] **Integrating Deep Learning to Decode Meningeal Interleukin-17 T Cell Mechanisms in Salt-Sensitive Hypertension-Induced Cognitive Impairment** (2024). Manuscript accepted for publication in *Innovations in High Speed Communication and Signal Processing (IHCSP) (IEEE Xplore)*, IHCSP-2024, PId: IHCSP2024-40, IEEE Conf. ID:63227

# ACHIEVEMENTS

- **MITACS GRI 2024 Scholar** (Among 800 scholars from 40,000 applicants worldwide)
- **3rd Prize, Paper Presentation, CSIR-CRRI** (Competed among Masters and PhD level students)
- **Sole Delegate to represent India**, IEEE Congress in Malaysia (Selected out of 6,765 active members, fully funded)
- **Summer Research Fellowship**, CSIR-CRRI (Among select few from 100k engineering sophomores across India)
- **Two funded government projects** Granted fund -"AI-driven Subway Analysis" & "Analysis of Water Conservation Structures"
- **Selected for Funded Internship - Switzerland** at two public universities (Among 30 scholars nationwide)
- **Selected for Funded Internship - Germany** at Saarland University (Among 150 scholars from 10,000 applicants nationwide)
- **Incubation support-** for my project "Social Media Crowdsourcing for Traffic Congestion Management" by DTU, a top govt.
- **Semi-Finalist, Badminton-** CSE Branch, JMI
- **Top 2% Rank**, JEE (Engineering Entrance Exam), India (Among 1 million applicants nationwide)
- Please [click here](#) for documents

# RELEVANT CERTIFICATIONS

- Machine Learning Specialization - DeepLearning.AI
- Mathematics for Machine Learning- Imperial College London
- Neural Networks and Deep Learning - DeepLearning.AI
- What is Data Science? - IBM
- Data Science in Real Life - Johns Hopkins University
- Python Data Structures - University of Michigan
- An Intuitive Introduction to Probability - University of Zurich
- The Sustainable Development Goals - University of Copenhagen
- Diversity and Inclusion in Education - University of Glasgow
- Please [click here](#) to view these & additional certificates

# RELEVANT CONFERENCES AND WORKSHOPS

- 'E is the new P' by Professor Grünwald, **CWI Amsterdam** (Virtual)
- 'AI@HPI on Responsible AI', **ELLIS Unit Potsdam & Hasso Plattner Institute** (Virtual)
- 'Ethical AI for Next Generation Technologies' in Putrajaya, **Malaysia** (In-person)
- 'Mathematical and Economic Modeling of On-demand Mobility Services' in London, **Canada** (In-person)
- 'Young Researchers Conclave', CSIR, New Delhi, India (In-person)
- 'Advancing Technology for Sustainable Development', BVICAM, IEEE, New Delhi, India (In-person)

# VOLUNTEERING AND EXTRACURRICULAR ACTIVITIES

- **Hope Foundation (NGO)** - Working for upliftment of underprivileged communities in India. Jan 2021 - Present
- **IEEE CS Delegate** - Representing IEEE in international conferences & CS SYP events. Sep 2023 - Present
- **Technical Head - IEEE JMI** - Leading events to advance technology for humanity. Jan 2023 - Present
- **SAE JMI Member** - Participated in discussions and events related to mobility engineering. Apr 2022 - Apr 2023
- **Campus Ambassador at Coding Blocks** - Actively promoting coding events & workshops. Feb 2022 - Mar 2023
- **Event Head - Exuberance 2023 (E-Cell JMI)** - Led a flagship event with 2,500+ attendees. Mar 2023
- Please [click here](#) for documents