Soumick Sarker
Data Scientist

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EDUCATION

Dual Degree (BTech/MTech) in Chemical Engg., *Indian Institute of Technology, Kharagpur*   2019 — 2024
CGPA: 8.78/10

Micro Specialization in Artificial Intelligence and Applications, *Indian Institute of Technology, Kharagpur*   2021 — 2024
CGPA: 7.25/10

High School (Science), *Garden High School, Kolkata*   2014 — 2018
ICSE: 96.4%, ISC: 94%

SKILLS

Tools and Languages	Python, Git, AWS, SQL
Quantitative Research	Computer Vision, Large Language Models, Generative and Graphical Methods in ML
Communication	English (proficient), Hindi

TECHNICAL EXPERIENCE

Data Scientist   Jun 2024 — Present
Fidelity Investments   *Bengaluru, India*
- Work on building new architectures for specialized tasks like call transcript evaluation adn scoring.
- Work on extracting meaningful insights from customer behavior online from web pages, emails and calls.

Student Intern / Scheme for Promotion of Academic and Research Collaborations (SPARC)   Dec 2023 — May 2024
Ministry of Education, Government of India   *India*
- Worked on a project of national importance with live data.
- Maintained a database and automated a large part of the process.
- Got invited to a personal meeting with the Secretary (HE) of the Ministry of Education (Post on their official social media page).

Data Scientist Intern / Generative Content Creation   May 2023 — Jul 2023
Fidelity Investments   *Bengaluru, India*
- Built a complete pipeline for image generation and latent space correction.
- Came up with a novel method to score/benchmark the generated images against reference/real images based on context and quality.
- Applied for a global patent on the pipeline.

Data Scientist Intern / Public Review Analysis / OCR for Data Tables   May 2021 — Jul 2021
Tata Consultancy Services   *Kolkata, India*
- Sentiment Analysis of social media reviews on the then-launched Building on Belief Campaign.
- Optical Character Recognition: Extracting data from images of data tables and expressing it on Excel sheets.

PUBLICATIONS AND PROJECTS

FGI-CogViT: Fuzzy Granule-based Interpretable Cognitive Vision Transformer for Early Detection of Alzheimer's Disease using MRI Scan Images
- Journal: Information Systems Frontiers 2024, (Special Issue– Artificial Intelligence (AI) and Bright Internet: Transforming the Internet for a Better Future)
- Authors: Anima Pramanik, **Soumick Sarker**, Sobhan Sarkar, Indranil Bose
- Status: Published in October 2024
- DOI: 10.1007/s10796-024-10541-7

Real-time Fall Detection on Road using Transfer Learning-based Granulated Bi-LSTM
IIT Kharagpur (BTech Thesis)
- Journal: Knowledge-Based Systems
- Authors: Anima Pramanik, **Soumick Sarker**, Sobhan Sarkar, Indranil Bose
- Status: Published in February 2024
- DOI: 10.1016/j.knosys.2025.113038

Energy-Well Based Distance-Aware Attention Mechanism for Tunable Focus: An Alternative to Self-Attention
- Journal: IEEE Transactions on Neural Networks and Learning Systems
- Authors: Soumick Sarker
- Status: Under Review
- Code: GitHub repository

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NovaNet: A Novel Method for Enhanced Pothole Detection on Road
- Conference: The 8th International Conference on System Reliability and Safety (ICSRS 2024)
- Authors: **Soumick Sarker**, Abhinav Thakur, Suswan Saha, Sobhan Sarkar
- Status: Accepted in September 2024
- Code: GitHub repository

1) OptiTrackEx: A Deep Learning Approach to Real Time Vehicle Collision Detection
2) A Two-stage Method for Detection and Distance Perception of Traffic Lights
- Conference: 13th Asia-Pacific Conference on Transportation and the Environment (APTE 2024)
- Authors: **Soumick Sarker**, Anima Pramanik, Sobhan Sarkar, Indranil Bose
- Status: Accepted in June 2024

Quantasio: A Generalized Neural Framework for Solving 3D Navier-Stokes Dynamics
IIT Kharagpur (MTech Thesis: Perfect Score 100/100)
- Submitted to IEEE Transactions on Artificial Intelligence (In review)
- Built a physics-informed PDE Solver that can solve multidimensional higher-order non-linear PDEs.
- Ability to solve multivariate PDE systems like Navier-Stokes equations for complex flow field simulations.
- Status: Under review at IEEE TAI

Academic Courses

- Programming and Data Structures, Product Development, Economics, Basic Electronics, Transform Calculus, Numerical Solution of Ordinary and PDE, Computer Aided Process Engineering.
- Deep Learning Foundations and Applications, Graphical and Generative Models in Machine Learning, Artificial Intelligence Foundations and Applications.