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# Soumick Sarker

## Data Scientist

github.com/soumick1  
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### EDUCATION

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|---|----------------|
| <b>Dual Degree BTech/MTech in Chemical Engg.</b> , Indian Institute of Technology, Kharagpur<br>CGPA: 8.81/10, (9 semsters completed) | 2019 — Present |
| <b>Micro Specialization in Artificial Intelligence and Applications</b> , Indian Institute of Technology, Kharagpur                   | 2021 — Present |
| <b>High School (Science)</b> , Garden High School, Kolkata<br>ICSE: 96.4%, ISC: 94%   | 2014 — 2018    |

### SKILLS

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

### TECHNICAL EXPERIENCE

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|--|---|
| <b>Data Scientist Intern / Generative Content Creation</b><br><i>Fidelity Investments</i> <ul style="list-style-type: none"><li>Built a complete pipeline for image generation and correction.</li><li>Came up with a novel method to score/benchmark the generated images against reference/real images.</li><li>Used to generated images to make company usable banners.</li><li>Built a complete website for banner creation using Streamlit.</li></ul> | <b>May 2023 — Jul 2023</b><br><i>Bengaluru, India</i> |
| <b>Data Scientist Intern / Public Review Analysis / OCR for Data Tables</b><br><i>Tata Consultancy Services</i> <ul style="list-style-type: none"><li>Sentiment Analysis of social media reviews on the then launched Building on Belief Campaign.</li><li>Optical Character Recognition: Extracting data from images of data tables and expressing it on excel sheets.</li></ul>  | <b>May 2021 — Jul 2021</b><br><i>Kolkata, India</i>   |
| <b>Applied AI Intern (ChemE Department) / Prof. Can Li</b><br><i>Purdue University</i> <ul style="list-style-type: none"><li>Physics Informed Neural Networks to approximate solutions for extensive chemical plants</li><li>Incorporation of Optimization techniques in deep learning models</li><li>Using sub-unit modelling for tackling the issue of dimensionality</li></ul>  | <b>Oct 2023 — Present</b><br><i>Indiana, USA</i>      |

### COMPETITIONS AND PROJECTS

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|--|--|
| <b>Transfer Learning-based Granulated-LSTM for Real-time Fall Detection</b><br><i>IIT Kharagpur</i> <ul style="list-style-type: none"><li>Multi-step detection process to detect people in a video frame and track each person throughout the video.</li><li>Temporal attention based granulated LSTM for analyzing the extracted features and predicting real-time falls.</li><li>Achieved an accuracy of 96.8% with a recall of 98.5%.</li><li>Journal Paper to be submitted</li></ul> | <b>Dec 2022 — Present</b><br><i>India</i>  |
| <b>Kharagpur Data Science Hackathon</b><br><i>IIT Kharagpur</i> <ul style="list-style-type: none"><li>Ranked 5th out of 230+ teams organised by Kharagpur Data Analytics Group.</li><li>Semantic Image Segmentation of satellite Images to detect vegetation.</li><li>Achieved an IOU score: 0.3 on the test data.</li></ul>   | <b>Mar 2021 — Apr 2021</b><br><i>India</i> |
| <b>Transformer based Partial Differential Equation Solver</b><br><i>IIT Kharagpur</i> <ul style="list-style-type: none"><li>Built a transformer based PDE Solver that can solve multidimensional and higher order PDEs.</li><li>A highly vectorized implementation of the Finite Difference Method is used to obtain the training data.</li><li>Equipped with explainable AI (captum) to describe how each independent variable attribution changes over time steps.</li></ul>           | <b>Jul 2023 — Present</b><br><i>India</i>  |

### 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.