

# Avik Pramanick

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## Education

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<b>M.Tech in Computer Science and Engineering</b> <i>Indian Institute of Technology, Kharagpur</i>	<b>7.95/10</b> Expected: 2025
<b>B.Tech in Computer Science and Engineering</b> <i>Govt. College of Engineering and Textile Technology, Serampore</i>	<b>8.44/10</b> 2016
<b>Higher Secondary Examination (10+2)</b> <i>West Bengal Council of Higher Secondary Education</i>	<b>75.71%</b> 2011
<b>Secondary Examination (10)</b> <i>West Bengal Board of Secondary Education</i>	<b>69.33%</b> 2009

## Relevant Coursework

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**Subjects:** Machine Learning, Deep Learning, Data Analytics, Distributed Systems, Complex Network Theory, High Performance in Computer Architecture

## Professional Experience

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**Assistant Engineer (IT&C), WBSEDCL** [Dec'17 – Jul'23]

- Analyzed more than 1,00,000 consumers billing and electricity demand data to identify usage patterns and resolve disputes, ensuring accurate bill generation and improved customer satisfaction.
- Performed electricity consumption analysis to identify high-demand areas and developed strategies to increase revenue by 30% in underperforming sections.
- Processed Demand & Collection datasets to generate actionable insights, optimizing collection processes and improving financial reporting accuracy by more than 27%.
- Collaborated with teams to implement data-driven solutions, streamlining workflows and enhancing operational efficiency across departments.

**Teaching Assistant, Programming & Data Structures Lab** [Aug'24 - Nov'24]  
*Indian Institute of Technology, Kharagpur*

- Guided 94 undergraduate students in tutorials and practical coursework, ensuring clarity in data structure concepts.

## Projects

[github.com/Avikg/projects](https://github.com/Avikg/projects)

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**Classification of TSS Signals to Predict Their Association with hg19 CAGE Peaks** [Aug'24 - May'25]

*M.Tech Project — Prof. Pralay Mitra, IIT Kharagpur*

- Processed 5,23,329 nucleotide sequences from the hg19 genome and CAGE peak data into labeled datasets with features such as motif types and positions.
- Built a Bi-LSTM model that takes 500 base pair of nucleotide sequences as input and outputs classifications of TSS signals, achieving an F1 Score of 79.43% on the validation set.
- Developed the **TSS Signals Prediction Server**: <https://cosmos.iitkgp.ac.in/CAGETag/> and the **DeepPROTECTNeo web server**: <https://cosmos.iitkgp.ac.in/DeepPROTECTNeo/> a platform enabling neopeptide discovery for personalized cancer vaccines using whole exome/genome sequencing data..

**Replicated Database with Write-Ahead Logging (WAL)** [Feb'24-Apr'24]

*Distributed Systems Project — Prof. Sandip Chakraborty, IIT Kharagpur*

- Built a load balancer to support dynamic shard and server management using consistent hashing.
- Engineered a sophisticated load balancing system utilizing consistent hashing techniques, achieving optimal shard distribution and server management that enhanced data processing efficiency by 40% during peak loads.

## Automatic Image Captioning Using CNN-RNN and Vision Transformers (ViT) [Feb'24-Apr'24]

*Deep Learning Term Project — Prof. Pawan Goyal, IIT Kharagpur*

- Developed a CNN-based encoder (ResNet50) and LSTM-based decoder for generating captions, achieving ROUGE-L: 0.269, CIDEr: 0.028, SPICE: 0.090.
- Built a ViT-GPT2-based encoder-decoder model, improving metrics to ROUGE-L: 0.397, CIDEr: 0.335, and SPICE: 0.134.

## Client-Server Chat Application with FAQ Chatbot [Mar'24]

*Design Lab Project — Prof. Niloy Ganguly & Prof. Mainack Mondal, IIT Kharagpur*

- Designed a client-server chat system supporting up to 10 concurrent clients, with private messaging, active user lists, and chat history management.
- Integrated rule-based FAQ and GPT-2 chatbots for answering queries dynamically.

## Skills and Expertise

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**Programming Languages:** Python, C, Java

**Frameworks & Libraries:** NumPy, Pandas, TensorFlow, PyTorch

**Tools & Technologies:** Docker, Git, Object-Oriented Programming

**Databases:** SQL, NoSQL

## Accomplishments

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- Cracked GATE in CSE twice, achieving AIR 726 in 2017 and AIR 938 in 2023.

## Extra-Curricular Activities

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- **Stock Market Trading and Investing:** Managed a portfolio of over 50 stocks, achieving greater than 30% annual returns through technical and psychological analysis.