Biswajit Banerjee

🌐 Atlanta, Georgia 📞 +1-(404)203-8546 ✉ bbanerjee32@gatech.edu in linkedin.com/in/bbaner

Education

- **Georgia Institute of Technology**   Atlanta, USA
  Master of Science in Bio-Informatics with Machine Learning Specialization   *Aug 2023 – Dec 2024 (expected)*

- **Asansol Engineering College**   Asansol, India
  Bachelor of Technology in Computer Science & Engineering GPA - 3.3/4   *Aug 2015 – Aug 2019*

Achievements

- **Invited to contribute our research paper** for publication in the Journal of Molecular Biology, special edition.   [link]
- Awarded the **Graduate Research Apprenticeship** for outstanding contributions and an innovative research proposal at Georgia Institute of Technology.
- Received Synopsys excellence award for achieving record breaking performance improvements with path group optimization algorithm. The algorithm became part of a software which was **featured in Forbes** [link].
- Winner of **Facebook scholarship** for being **top 2%** performers within a pool of 15000 candidates in **Secure and Private AI** competition.

Research Experience

- **NASA Center for the Origin Of Life, Georgia Tech**   Atlanta, USA
  Graduate Researcher — Machine Learning   *Aug 2023 - Current*
  - Applying deep learning techniques to analyze **protein folding** within the realm of 3D surface symmetry, determining similarities between protein folds. Investigating and quantifying fold domains' impact on metabolic reactions, establishing correlations between protein fold structures and their influence on specific biochemical reactions.
  - Utilized **Graph Neural Networks** to reconstruct primal metabolic pathways, investigating the origins of life-sustaining reactions. Presented at Explore Origins Symposium. [link]

Work Experience

- **Stellapps**   Bangalore, India
  Senior Data Scientist — Computer Vision   *May 2022 - Jul 2023*
  - Developed Open Set Identification for cattle insurance and identified all unregistered(out of set) cattle with an accuracy of **92%** and all registered(in set) cattle identified with an accuracy of **84%**.
  - Optimized the network for **2ms** of forward pass and deployed in android with vector database on the back-end.
  - Trained YOLOv6 network to identify the number of different farm animals present in the frame with an MaP of **88%** at IoU **0.95** and deployed in mobile devices.

- **Synopsys**   Bangalore, India
  Research & Development Engineer — AI/ML   *Oct 2019 - May 2022*
  - Created a pipeline to train a slack prediction (regression) model which replaced weeks long interpolation method to hour long training and inference.
  - Identify which timing path needs optimization using with casualty analysis which resulted in **45%** less power consumption and **30%** performance improvement for new ARM series chip-sets.
  - Created a big data Extract Transform & Load pipeline utilizing spark and airflow to make the data modeling ready.
  - Led the development of back-end FastAPI APIs for model deployment.

Technical Skills

Machine Learning	Pytorch, Tensorflow, Sklearn
Big Data Technologies	Pyspark, Dask, Pandas
Data Visualization	Matplotlib, Seaborn, Plotly
Languages	Python, Java Script, C, C++, bash scripting
Version Control	Github, Gitlab, Perforce
Other Technologies	PySyft, Airflow, FastAPI, Flask, PyMOL, MinIO