Biswajit Banerjee

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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

- 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 computer vision competition.

Work Experience

- **Center for the Origin Of Life Lab** — Atlanta, USA
  Graduate Researcher — Machine Learning — *Aug 2023 - Current*
  - In collaboration with **NASA**, Our research focuses on pioneering the application of **diffusion models** to engineer novel proteins with diverse functionalities, addressing critical challenges across various fields.
  - Utilized Graph Neural Networks to analyze and reconstruct ancient metabolic pathways, contributing to a deeper understanding of historical biochemical processes.
- **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.
  - All contributions were made to an application named DesignDash that is deployed and currently in use by Samsung, Microsoft, AMD for accelerating their chip designing process [link]..

Featured Projects

- **Open Chat — Facebook scholarship winning project [2019]**: An open-source chat application with client server architecture where the messages gets translated to the users preferred language at the server using Neural Machine Translation and Python Socket API [link].

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	OpenCV, Airflow, FastAPI, Flask, Pymongo, MinIO