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*

Evidence of Excellence

- 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 2022].
- **One of the three Winners** of OpenSUSE Cloud Engineer scholarship competition [2021].
- Winner of **Facebook scholarship** competitions including Facebook Computer Vision for being **top 2%** performers within a pool of 15000 candidates [2019].

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.
- **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].
- **Image Segmentation of Geographical Data — Final Year undergrad project [2018-19]**: I led the development of a project focusing on identifying distinct features and regions within satellite images for improved land cover classification and environmental monitoring.

Technical Skills

Machine Learning	Pytorch, Tensorflow, Sklearn
Big Data Technologies	Pyspark, Dask, Pandas
Data Visualization	Matplotlib, Seaborn, Plotly
Languages	Python, JavaScript, C, C++, Bash, Matlab
Robotics	SLAM, PCL, Robot OS
Other Technologies	OpenCV, Airflow, FastAPI, Flask, Pymongo, MinIO