DEBAJYOTI DASGUPTA | 18CS30051

COMPUTER SCIENCE & ENGG. (M.Tech Dual 5Y)

EDUCATION

Year	Degree/Exam	Institute	CGPA/Marks
2023	M.TECH Dual Degree 5Y	IIT Kharagpur	9.77 / 10
2018	AISSCE	Apeejay School, Nerul (CBSE)	97.4%
2016	AISSE	Apeejay School, Nerul (CBSE)	10 / 10

SKILLS AND EXPERTISE

Languages: C/C++, Python, Javascript, Java, Kotlin, Verilog, HTML/CSS, Octave, Bash, MySQL
Framework: Tensorflow, PyTorch, Keras, KerasRL, Sklearn, Numpy, Pandas, Matplotlib, Django, Flask, JSP, ReactJS, AngularJS, ExpressJS, NodeJS, LightFM
Technologies: MongoDB, Oracle, Google DataStudio, BigQuery, Azure Web App, AWS ML, Git, REST api, Android, Linux, Postman **Beginner:** Docker, Kubernetes

INTERNSHIPS

Kalpkriti Inc, Bangalore | Software Development Engineering Intern **[July 2020 - September 2020]**

Built a recommendation system for videos using LightFM Framework (trained on 1M data) and handled coldstart using hybrid model. Also built REST APIs using NodeJS in the backend and MongoDB for integration. Built complex queries in SQL and BigQuery to fetch data and made visualizations with Google Data Studio to make business decisions.

Cryogenic Engineering Centre, IIT Kharagpur | Deep Learning Engineering Intern **[April 2020 - August 2020]**

Built a Deep Learning based model using Recurrent Neural Network or/and GRU/LSTM for Digital Twin of the Cryogenic Energy Storage System integrated with a Matlab simulator. Experimented and built a deep learning model architecture that will help operator to take operational decisions on the plant for error free working of the energy storage system without prior domain knowledge using few shot learning. Achieved 95% accuracy with the model and built a web app to demonstrate the decision making.

Complex Networks Research Group, IIT Kharagpur | Undergraduate Research Intern **[April 2021 - Present]**

Built a task agnostic model using the reptile meta learning algorithm on the Abstraction and Reasoning Corpus and achieved an accuracy of 95% on the training and test set using CNN architecture. Annotating the dataset using crowdsourcing platform Appen so that natural language rules can be used by NLP model to build a similar agnostic model. Future Task: Integrate the task agnostic model with Chatbot so that it will be able to learn from feedback of the user without developer intervention.

PrepBytes Technologies Private Limited | Problem Setter and Tester Intern **[December 2020 - July 2021]**

Built problems which test algorithmic and data structure knowledge from varied domains like dynamic programming and greedy approaches and also test the problems. Given responsibility for Conent Creation and Doubt Clearance of the participating students while understanding the need of the team in terms of quality.

COURSEWORK INFORMATION

Institute Courses:- Algorithms, Operating Systems, Computer Networks, Machine Learning, Software Engineering, Formal Language and Automata Theory, Switching Circuits and Logic Design, Sytems and Networks, Probability and Statistics, Discrete Structure, Accelerated Data Science, Database and Management Systems
Online Certification:- Machine Learning, Deep Learning, Reinforcement Learning, Tensorflow Specialization

PROJECTS

Deep Q-Network based Smart Grid Scheduler | B.Tech Thesis Project (Supervisor: Prof. Partha P Chakraborty & Prof. Arijit Mondal)

- Use the Deep Q-Network as described in *Minh et al* to build a Reinforcement learning agent that will schedule jobs on appliances connected on a smart grid.
- Build a user friendly web application using ReactJS that will be using the model to give out a scheduling based on the request for the resources made by the user.

Plan My Trip (https://github.com/debajyotidasgupta/PlanMyTrip) | Software Engineering and DBMS Lab Term Project

- Simple and user-friendly app built in ReactJS and designed in Figma to help the tourists make booking to dream destinations and write blogs about their memories.
- Backend REST APIs are made using the Flask framework and MySQL database has been used for the storage of the data. Postman is used for api debugging.
- A Machine Learning Model is being integrated using the Tensorflow Framework to provide recommendations for the best travel options using few user choices.

Desktop Screen Recorder App (https://github.com/debajyotidasgupta/Desktop-Screen-Recorder)

- Simple and easy to use Cross platform Desktop app built with ElectronJS, for recording live streams in a locally so that it can be uploaded and rewatched easily.
- NodeJS are used for files and video saving. Special Inter process communication modules are used for the application. Used Custom preload scripts for security.

Neural Network Visualizer (https://github.com/debajyotidasgupta/Neural-Network-Visualiser) | Coursera

- Used for visualizing the internal working of the Deep Neural Network, built using Streamlit Framework. The backend model server was built using the Flask
- Model is designed using Tensorflow Framework and Keras API on Jupyter Notebook Application on the MNIST Dataset for the prediction of the handwritten digit.

COMPETITION/CONFERENCE

Google Kickstart (Round A 2021) | Facebook Hackercup 2020 **[2021]**

- Secured 255 th rank in the world among 20,000+ participants in Google Kickstart, a coding competition organised by google for testing on Algorithmic Puzzles
- Secured 608 th rank in the world among 33,000+ participants in Facebook Hackercup, annual international programming competition hosted and administered by Facebook.

CodeOSoccer | KRSSG, KSHITIJ **[2021]**

- Secured the 1st (WINNER) position among all the participating teams from differnet universities in CodeOSoccer, a simulation based strategic coding event for Football match
- Built an Artificial Intelligence based model using Reinforcement Learning Algorithms for playing in three position of a football - the goalkeeper, defender and the attacker.

Smart India Hackathon | Software Edition **[2020]**

- Cleared the college level of the competition by building a Deep Neural Network using Darknet to identify a car and match the license plate with that of the suspect.
- Also retraced the path of the car to create a timeline of the movements and used Kafka Streams to implement in real time which is an aid to police investigation.

POSITIONS OF RESPONSIBILITY

Kharagpur Open Source Society | Executive Head **[April 2020 - April 2021]**

Conducted workshops for Open Source Awareness like in Python and Git to provide students with the basic technology knowledge to get started with contributing to the Open Source Projects. Successfully conducted KWoC which is a small-scale open source contribution marathon, at the national level with 2000+ participants and 150+ projects

AWARDS AND ACHIEVEMENTS

- 2018 | Secured a rank in National top 1% among 2,00,000+ participants in National Standard Examination in Physics (NSEP)
- 2018 | Secured a rank in State top 1% among 7,000+ participants in National Standard Examination in Chemistry (NSEC)
- 2018 | Recipient of the prestigious President's Gold Medal for outstanding Academiic performance and scored among national top 0.1% in Physics, AISSCE
- 2017 | Secured a rank of AIR 245 among 1,00,000+ participantsa in Kishore Vaigyanik Protsahan Yojana and was awarded the KVPY scholarship
- 2016 | Secured a rank among the top 1% students who qualified RMO among 700+ students and secured a spot in INMO from Maharastra and Goa region

EXTRA CURRICULAR ACTIVITIES

- Awarded Bronze Medal for securing 3rd position in the General Championship Maths Olympiad, IIT Kharagpur and participant of the Navi Mumbai Badminton Championship.
- Completed the Government certification for Elementary and Intermediate Painting and Art and atendee of several developer conferences like those organised by AWS & GDG

!self declaration by the student