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Sriyash Poddar

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Third Year Undergraduate
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Academics

2018 - 2023 (Expected)	*M.Tech + B.Tech* in Computer Science and Engineering Indian Institute of Technology, Kharagpur	**GPA: 9.30**/10.0 (Ongoing)
2018	Central Board of Secondary Education, **CBSE** Birla High School, Kolkata	**Percentage:** 97.20%
2016	Indian Certificate of Secondary Education , **ICSE** M C Kejriwal Vidyapeeth, Kolkata	**Percentage:** 98.00%

Technical Interests

Machine Learning, Reinforcement Learning, Robotics, Multi Agent Learning, Natural Language Processing, Computer Vision

Research Experience

Aug'20 - Current — **CERN Atlas Group, Chinese University of Honk Kong** — Guide: Dr. Luis Roberto Flores Castillo

Objective: Development of Deep Learning Models for High Energy Physics, specifically high mass lepton flavour violation study. Link

- Developing deep learning models to search for physics beyond the standard model.
- Used ANN-based anomaly detection and classification to search for exotic particles in atomic collisions.

May'19 - Current — **Kharagpur RoboSoccer Students Group** — 3D Simulation Humanoid Team Member

Objective: Design and Implementation of autonomous humanoid agents capable of playing 11 vs 11 soccer.

- Building an environment using PyBullet to train an end to end walk engine of a Nao-v40 bot. Link
- Used Covariance Matrix Adaptation Evolution Strategy to optimise the parameters of an Inverse Kinematic Walk Engine, and doubled the performance across tasks like walking and dribbling.
- Member of the only undergraduate team to qualify for the 3D Simulation League at RoboCup Sydney, 2019. KRSSG Team Description Paper 2020

Jan'20 - Current — **Complex Networks Research Group** — Guide: Dr.Niloy Ganguly

Objective: Working on sentiment analysis and multi task learning. Paper under Review at ECIR 2021

- Implemented a RoBerta-model to achieve SOTA performance (by 5%) on multilabel classification of tweets.
- Using Hierarchical Multi Task Learning to identify the relationship between continuous and discrete sentiments.

Objective: Working on Aspect Based Opinion Summarization, of user reviews on TripAdvisor. Link

- Applied SOTA techniques such as Double Propagation and unsupervised ABAE to extract aspects.
- Used Unsupervised Summarization models to generate summaries with coherent aspects and sentiments.

Technical Skills

Languages	C | C++ | Python | Julia | Java | JavaScript | Go
Frameworks	PyTorch | Tensorflow | OpenAI Gym | dm-control | Flux | ROS | OpenCV
Others	Flask | ReactJS | SQLAlchemy | Elastic | Docker | Git | Linux | Latex

Projects

- **The Julia Language**
  - Contributed to the FluxML backend, in the packages NNLib.jl, Gym.jl, Flux.jl, adding various loss functions and optimizers.
  - Implemented RL algorithms and environments such as MuJoCo-Ant using Lyceum.jl, and the package Gridworlds.jl.
- **Athena**
  - Built a course management system as a part of the Software Engineering Project, using ReactJS and Flask. Link
  - Added features like recommend courses, build schedules and forums and notice boards, using SocketIO and ElasticSearch
- **IBM Green Hack**
  - Developed an LSTM based approach to model irregularities in meteorological patterns to predict the highest yield crop.
  - Declared winners of the overnight hackathon based on tackling climate change.

Coursework

(T)heory and (L)aboratory

Algorithms, Formal Language and Automata Theory, Probability and Statistics, Machine Learning, Computer Organisation and Architecture (T/L), Compilers (T/L), Natural Language Processing, Stochastic Processes in Finance, Linear Algebra

MOOCs: cs285, cs231n, cs224n, cs229n, stat110

Achievements

- **IIT-JEE Advanced AIR 387:** Under top 0.2% amongst more than 2,00,000 students
- **IIT-JEE Mains AIR 591:** In top 0.1% amongst more than 11,00,000 students.
- **National Olympiads:** Awarded the KVPY Fellowship by the Government of India

Extra Curricular

- **Co-ordinator, CodeClub, IIT Kharagpur:** Organised up.AI 2018, one of the largest summits in the state on AI for Social Good.
- **Student Mentor, ML Winter School, IIT Kharagpur:** Mentor at a workshop for college students on Machine Learning.