Sachin Yadav

Undergraduate Student, IIT Gandhinagar

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EDUCATION

B.Tech in Computer Science and Engineering, *2018 - Present*
Indian Institute of Technology (IIT) Gandhinagar
CGPA: 9.25/10.0

HSC [Class XII] (CBSE board), *2017*
Mount Abu Public School, Delhi, India
Percentage: 96.0

SSC [Class X] (CBSE board), *2015*
Mount St. Mary's School, Delhi, India
CGPA: 10.0/10.0

INTERNSHIPS

Student Trainee, Software R&D, *May 2021 - July 2021*
Advanced Technology Lab (ATL) Group, Samsung Research Institute Bangalore
Advisors: Poonam Thapar & Dr. Vijay Narayan Tiwari

- Worked on in-situ human action classification based on IR-UWB (Impulse Radio Ultra Wide-band) radar technology for the next-generation Samsung devices.
- Devised a data pipeline for adaptive clutter removal and extracting hand-crafted features from raw data.
- Designed and trained a CNN architecture achieving 92.37% accuracy on a dataset of multiple room locations.
- Received Pre-placement offer for the role of 'Advanced Developer'

Intern, Contests and Learning Team, *Dec 2019 - May 2020*
CodeChef, Directi

- Worked to prepare their certification exam (CCDSAP) and organising external rated contests on the platform.
- Managed the MOSS process of contests and adapted custom judges for Interactive problems.

PROJECTS

Accelerating Deep Learning Training on GPU with Smart Algorithms, *Aug 2021 - Nov 2021*
Advisor: Prof. Anirban Dasgupta, IIT Gandhinagar

- This work explores sparse adaptive training of large neural networks using approximate nearest neighbor algorithms HNSW and IVF-PQ index to accelerate training on GPU hardware.
- Proposed a variation of Adaptive Sparse training for implementation on GPU.
- Implemented the proposed algorithm in PyTorch. The evaluations were done on an industry-scale recommendation system to evaluate the computational gains.

ProfQuest: Academic Search Engine, *Jan 2021 - March 2021*

- Designed a web crawler to create a dataset of around 72,000 professors and 450 universities using Scrapy and Scrapoxy.
- Devised a ranking methodology based on user-specified weights for multiple ranking parameters.
- Proposed a modified TF-IDF score method and developed a web application for the search engine.

OH-SNAP: Optimized Hybrid Scaled Neural Branch Predictor, *Jan 2020 - March 2020*

- Implemented OH-SNAP with dynamic weight scaling and adaptive threshold training on ChampSim.
- Built a web interface to run ChampSim and create a hybrid of two independent branch predictors.

Kick-Out, a two-player strategy game with win predictor, *Jan 2020 - March 2020*

- Conceptualized the game on a 2D board and implemented win predictor using Nimbers.
- Developed the static and online version of the game using Express.js, Mongoose and Socket.IO.

Positions of Responsibility

- **Teaching Assistant** (Prof. Anirban Dasgupta)   *Jan 2022 - Present*
  Course: Introduction to Data Science.

- **Event Organiser, Amalthea 19, Annual Tech Summit of IIT Gandhinagar**   *June 2019 - Oct 2019*
  Contest Setter for D'Code, a competitive programming rated contest on CodeChef platform

- **Event Organiser, HackRush, Annual Coding Hackathon of IIT Gandhinagar**   *Nov 2018, Jan 2020*
  Prepared problem statement of an order processing system for on-campus food outlets and an interactive map for the IITGN campus.

Achievements and Honors

- Featured in **Dean's List** for semesters 1, 2 and 3 for exceptional academic performance at IIT Gandhinagar.

- Selected for the prestigious **KVPY Fellowship**, awarded by the Department of Science and Technology, Government of India in 2016. This Fellowship is awarded to the top ~1000 students from ~100,000 students from all over India.

- Selected for ICPC Indian Regionals Pune-Gwalior 2019.