MANAN GOEL

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EXPERIENCE

Undergraduate Researcher
CCNSB, IIIT Hyderabad

📅 May 2019 – Present   📍 Hyderabad, India

- Finding different Machine Learning Applications to solve Computation Chemistry and Cheminformatics Problems.

AI/ML Intern
PredOmix

📅 September 2020 – Present   📍 Remote

- Computer aided drug design using ML based techniques.

Intern
Google Summer of Code (Open Chemistry)

📅 June 2020 – August 2020   📍 Remote

- Add support for ANI-style Neural Network Potentials to rdkit.
- Implement neural networks in C++ while adding support for new contributors to integrate newer models seamlessly.
- Creating python wrappers for each of the implemented modules.

Web Development Intern
Khaata.in

📅 May – July 2019   📍 Remote

- Developing new features for the Flask based web app of the company.
- Maintain previously implemented features and tweak them according to client feedback.
- Implement functional and unit tests for the web app in Docker using pytest and Selenium.

Data Mining Intern
Fibonacci Labs

📅 September – October 2018   📍 Remote

- Writing web scraping scripts to fetch and clean data from GitHub using BeautifulSoup and Selenium in Python.
- Optimizing the web scraping process for time involved and data collected and store it in a MongoDB server

ACHIEVEMENTS

- Recipient of the prestigious KVPY fellowship.
- Secured AIR 2543 in JEE Main 2017.
- Winner of Megathon (India's Largest student organized hackathon) 2019

SKILLS

Programming Languages
C++, Python, JavaScript, C, GoLang, BASH, JAVA

Frameworks
Pytorch, Numpy, Scikit-Learn, ReactJS, OpenGL, WebGL

Miscellaneous
Latex, Git, MySQL

EDUCATION / COURSES

Bachelor of Technology
International Institute of Information Technology

📅 August 2017 – Present

- Teaching assistant for Advance Biomolecular Architecture and Computing in Sciences which involved teaching, making and grading assignments and exams.
- Dean's Merit List: Awarded to top 3% of the class.

Senior Secondary School
St. Theresa's Convent School

📅 2003 – May 2017

POSITIONS OF RESPONSIBILITY

- Head of the Open Source Development Group of IIIT Hyderabad
- Placement Coordinator at IIIT Hyderabad
- Cultural Coordinator at IIIT Hyderabad
- PyConf Hyderabad 2019 Core Team Member

PROJECTS

Imputing Missing Protein Data using GANs

- Protein data obtained from experimental methods have missing regions.
- I used GANs to learn the distribution of backbone torsion angles while using different methods to learn the environmental information including CNNs, LSTM, ResNet and BERT.

DNA Base Pair Stacking Energy Prediction

- Generate the 2 molecules as disconnected graphs and learn the best feature representation using graph convolution.
- Learn inter-atomic interactions across the molecules to get intuition about Natural Bond Orbitals.

POSIX Shell

- An implementation of the POSIX Shell from scratch in C using only system calls.
- Functionalities include basic shell commands including commands for process management along with a few custom commands.

Video Emotion Detector

- A webapp for annotating videos with face detection along with emotion annotation in 7 classes.
- Face recognition using the FaceNet model with emotion detection using a model built with dilated convolution layers.
- Deployed using a Flask backend.