

MANAN GOEL

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EXPERIENCE

Undergraduate Researcher

CCNSB

May 2019 – Present Hyderabad, India

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

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 2019

SKILLS

Programming Languages

C++, Python, JavaScript, C, GoLang, BASH

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

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

Solvation Free Energy Prediction of Molecules

- Predict the solvation free energy of a given molecule using deep neural networks with graph based data representation.
- Creating an appropriate data representation vector of the molecule by using message passing in the graph along with graph attention.
- Train the model so as to get the least MAE.

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.

Reaction Product Prediction

- Predicting products of a chemical reaction with given reactants using graph convolution and attention.
- Graph convolutions learn local information around each atom following which attention is used to capture long range dependencies.

Voice Assistant for the FreJun Meeting Assistant

- FreJun is a meeting assistant which helps users create notes for meetings.
- Developed a Proof of Concept for them along with 2 teammates of a voice assistant for the same.
- The voice assistant recognized commands and took notes accordingly.

Flight Simulation Game

- A 3D game developed as a part of Computer Graphics course using OpenGL and STL.
- Involved the use of different cameras in the screen along with different viewpoints for the player.
- Required in-depth mathematical understanding of 3D geometry for tasks like collision detection of complex objects.

Point-Of-Sale System

- A web-based POS system for Best Bhoj, an eatery in my hometown: Karnal. Since they had multiple branches and the databases needed to be in synchronization. The development was done in django.