Yashaswi Pathak

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Skills

Programming Languages
C/C++, Python, JavaScript, Bash
MATLAB, SQL

Web Technologies
HTML, CSS, ReactJS
Django, Ruby on Rails, Flask

Frameworks and Tools
OpenCV, Keras,PyTorch, Scikit, OpenGL, Gaussian, AWS, Git

Coursework

Computer Science
Data Structures, Algorithms, Theory of Computation, Software Architecture, Operating Systems, Machine Learning Computer Graphics, Computer System Organisation, Optimization Methods ML for Natural Science, Compilers, Information Retrieval and Extraction

Mathematics
Discrete Mathematics, Group Theory, Complex Analysis, Linear Algebra, Probability & Statistics

Positions Held

Member of Institute's Finance Council for Financial year 2018-19 and for IIIT Hyderabad's annual techno-cultural fest, Felicity 2019

Sport's Captain for year 2018-19, IIIT Hyderabad

Captain of Institute's Football Team, IIIT Hyderabad (Sept 2018-Present)

Education

B.Tech in Computer Science with MS by research in Computational Natural Sciences | 2016-2021
International Institute of Information Technology | Hyderabad, India
Current GPA: 9.18/10 |Dean's List (All Semesters)

Research

Center for Computational Natural Sciences and Bioinformatics (CCNSB)| May 2018 - Present
Graduate Research Assistant | IIIT, Hyderabad

- Chemically Interpretable Graph Interaction Network for Prediction of Pharmacokinetic Properties of Drug-like Molecules (Proceedings of the 34th AAAI Conference on Artificial Intelligence,AAAI-2020)(link)
- BAND NN:A Deep Learning Framework For Atomization Energy Prediction and Geometry Optimization.(Journal of Computational Chemistry 2019) (link)
- DING:A Deep Inorganic Materials Generator Based on Conditional Variational Autoencoders.(link)
- From NMR spectra to Molecule: Alpha zero (Deep learning + MCTS) like algorithm to find molecule directly form NMR spectrum.

Experience

99andBeyond | April 2020- Present
Machine Learning Researcher | Montreal, Canada

- Part of the team that developed Apollo1060: RL based agent that can search for readily-producible small molecules with 5 or fewer chemical reactions.
- Working on developing autonomous platform for drug-design and discovery.

MatSci AI | June 2019- August 2019
Research Analyst | Hyderabad, India

- Developed Pipeline for various NLP Tasks.
- Worked on Database design and efficient Data extraction design for a huge data set of Industry materials.

IIIT, Hyderabad | Aug 2018 - Present
Teaching Assistant | Hyderabad, India

- Assisted Teaching Sessions for Discrete Structures ,with around 200 students.
- Conducted Lab sessions for Computer Graphics, with around 180 students.
- Assist Teaching and Lab sessions for Computational Science Lab.

Projects

Computer Graphics | Game Development | Jan - Mar 2018 C++ OpenGL

- Develop 2D(Pacman Killer) and 3D(Legend of Zelda) games
- Incorporated laws of physics(gravity etc.) without using any game engine

Operating Systems | Linux Shell | Sep 2018 C UNIX System Calls

- Develop UNIX shell to interact with the kernel using system calls
- Implemented features for I/O redirection, piping, background processes

Search Engine| Information Retrieval | Sep 2019 Python3

- Built a search engine in Python on the Wikipedia data dump.
- The engine had a variety of capabilities like field queries, exact-match retrieval and best-match retrieval.

Hatespeech Detection | Social Media Analytics | Sep - Nov 2019 Pytorch

- Twitter dataset was used for analysis
- Structured based Tree-LSTM model and structured self Attention based models were used to perform the various tasks.

Compiler Frontend | Compilers | Sep - Nov 2019 C++ bison flex llvm

- Developed a compiler frontend for a toy programming language.
- The compiler includes lexical and syntax analysis, AST generation, interpreter and LLVM code generator.