Archit Rungta

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EDUCATION

Indian Institute of Technology, Kharagpur — Integrated *MS in Mathematics and Computing* — JULY 2018 – APRIL 2023*
CGPA – 9.27/10
Achieved a **top 0.1 percentile** rank in JEE examination taken by **1.6 million aspirants**

International Olympiad in Informatic Training Camp, India — 2016 AND 2017
Youngest participant in 2016. Finished at 22nd and **9th position** in 2016, 2017 respectively.

Delhi Public School, Patna — *High School* — MARCH 2004 - MAY 2018
CBSE Board, Subjects: English, Physics, Math, Chemistry, Computer Science - **96.4%**. Overall School Rank **3/150** with **Rank 1** in Computer Science.

SKILLS

Programming Languages — *Python, C++, C#, JavaScript, PHP, MatLab*
Machine Learning — pandas, numpy, XGBoost, LightGBM, *sklearn*, Keras, fastAI, *CUDA, OpenCL, NEAT*
Software — *Git, Jupyter, Latex, SSH*
Languages — *English, Hindi*

PROJECTS

Lingatagger — Part of *NLP toolkit for Indian languages* - *https://github.com/djokester/lingatagger* — NOVEMBER 2018 - PRESENT
Contributed to open source project by expanding training corpus. Improved accuracy of word gender tagger for Hindi(all words in Hindi have a gender associated) using 1D convolutions. Working on implementing LSTM to further improve accuracy from context.

Physical Gradient Descent — *Independent research into gradient descent optimization* — SEPTEMBER 2018 - PRESENT
Developing an algorithm with adaptive learning rates based on Shannon entropy for gradient descent. Using Tensorflow and Keras for prototyping and hyperopt for parameter tuning. Currently tends to beat rmsprop and is close in performance to Adam.

Virtual Hand — *Reconstruction of hand in 3D space* - *https://youtu.be/Rl1C584UrW0* — DECEMBER 2017 – MARCH 2018
Made a glove that uses IMU sensor to map the entire hand with all its motions. As a sample use, created NEAT neural networks to learn sign language symbols and interpret. The project was coded in C++ and Python.

arcMiners — GPU cryptocurrency miners - https://github.com/archit120/arcMiner — MARCH 2014 - APRIL 2016
Made the first GPU miner for the keccak POW algorithm, and Protoshares momentum POW based on existing miners utilizing CUDA for Nvidia GPUs and OpenCL for AMD. Later, made a new miner from ground up focusing on modularity and abstraction. Cumulative profit in fees is over USD 100K.

Monero Pool — *Cryptocurrency Mining pool* - *https://github.com/archit120/Monero-Pool* — MAY 2014 - JULY 2014
One of the two contenders for mining pool for Monero. Includes a Redis based data storage system as well as a front end. Designed for maximum utilization of multi core CPU by sharing work among hundreds of threads at once. Written in C#, C++, PHP and JS.

Charge Field — *Drawing field lines of static charges* — JUNE 2016 - JULY 2016
Created a classical physics model of static charges with forces and collisions. Software drew the field lines and their interaction in real time. Computation was offloaded to GPU using CUDA to achieve realistic frame-rates even in the case of high number of particles.

ACHIEVEMENTS

IBM NLP Hackathon, IISc Bangalore — Part of two-member team coming in top 10 for binary classification of news as reliable/un-reliable. — NOVEMBER 2018 - PRESENT

ONLINE COURSES

CS231n, Stanford — *Image Recognition, CNN, RNN, LSTM, PyTorch* — DECEMBER 2018 – MARCH 2019*
Practical Deep Learning, fast.ai — *Resnet, Embedding, LSTM, RNN, Differential Learning* — NOVEMBER 2018 – DECEMBER 2018
mlcourse.ai, Open Data Science — *XGBoost, Random Forests, Ensembles* — OCTOBER 2018 – DECEMBER 2018
Machine Learning, Coursera — *Logistic and Linear Regression, SVM, PCA, LDA* — JANUARY 2015 – APRIL 2015

EXTRA-CURRICULARS

Debating Society, IIT Kharagpur — Debater — AUGUST 2018 - PRESENT
Participate in various parliamentary debates held in college.

Delhi Public School, Patna — *Competitive Programming Coach* — SEPTEMBER 2016 - JANUARY 2018
Mentored Competitive Programming to students of junior classes.

(*) - Expected
January 24, 2019