Deep Tavker

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EDUCATION

IIT Bombay
B.Tech Mechanical Engg.
Expected - Dec 2020
Cum. GPA: 8.03 / 10

Nirman High School
Grad. May 2015 | Ahmedabad, IND
97.82%ile | INSPIRE Scholarship

LINKS

Github: **deeptavker**
LinkedIn: **deeptavker**

SKILLS

Programming
Over 4500 lines of code
Python • Shell • C++

Toolkits
SciPy Stack • Tensorflow • Keras
Jupyter • Nvidia Cuda • CMake
Scikit-learn • OpenCV • git
OpenCL • OpenACC • Wireshark
SSH • AngularJS • PySPH
Bloomberg Terminal

COURSEWORK

Data Mining & Applications
Deep Learning
Industrial Economics
Probabilistic Models
High Performance Computing
Data Structures and Algorithms
Computer Networks

CO-CURRICULAR ACTIVITIES

Teaching Assistant @ IITB
Editor @ Insight, IITB
Web Dev @ Mood Indigo, IITB
15-day Mountaineering Course
Music course on Keyboard
Quant Finance Workshop

EXPERIENCE

Mitacs Research Scholar | Polytechnique Montreal
May-July 2018 | Montreal, Canada | Prof. Ahmad Shakibaeinia | HPC

- Parallelised a nearest neighbour algorithm using CUDA resulting in a speedup of 200X for the specific task and an overall speedup of 1.45X after modular integration with MPARS library for fluid flow simulations
- Conducted a department level hands-on workshop on Git VCS, GitHub, GNU Bash and Using CalculQuebec Computational Servers

Quantitative Analyst | NSE Trading Lab - ISB Hyderabad
December 2018 | Hyderabad, India | Algorithmic Trading

- Modified a Pairs Trading algorithm in Python using Kalman Filtering to yield an 11.35% return and 4.77 Sharpe ratio for Indian Futures Market
- Analysed behavioural loan-repayment model in US through a 27-variable regression analysis with an r-square of 0.44

Software Developer | IIT Bombay
April-July 2017 | Mumbai, India | Prof. Prabhu Ramachandran

- Publication under review in ACM Transactions on Mathematical Software - *PySPH: a Python-based framework for smoothed particle hydrodynamics (2019-20)*
- Built an interactive and dynamic graphical simulation visualiser based on *matplotlib & Jupyter Widgets* and ported the entire test suite of PySPH from nose to pytest and enabled coverage analysis for Python and Cython code

AI Researcher | Dev Information Technology
Feb-March 2020 | Ahmedabad, India

- Designed and implemented a 96.6% accurate Deep learning solution to a Natural Language Processing problem for use by legal professionals
- Implemented a research paper by DeepMind for continuous learning of a recurrent neural network & tuned a convolutional neural network for a facial recognition based attendance system

ACADEMIC PROJECTS

Accelerating MCMC simulations via prefetching
Jan - April 2018 | IIT Bombay | Prof. Shivasubramanian Gopalakrishnan
Implemented Brockwell's method for speeding up Markov Chain Monte Carlo simulations for computing ARFIMA parameters & wrote supporting python scripts for cross validation based on random series generation

Fluid flow simulation using vortex methods
July - Nov 2017 | IIT Bombay | Prof. Prabhu Ramachandran
Implemented 2D Vortex methods in python for fluid flows around closed geometries using the Panel Method and visualised vortical flow past circular cylinder

Finite Volume Methods in SciLab
July - Nov 2017 | IIT Bombay | Prof. Atul Sharma
Implemented a Navier Stokes PDE solver using FVM Predictor-Corrector approach on Staggered and Co-located grids & accurately simulated the Lid Driven Cavity benchmark problem by comparing the numerical results with Ghia, et al. data