Prakhar Ganesh

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EDUCATION

INDIAN INSTITUTE OF TECHNOLOGY (IIT) DELHI
BTech in Computer Science and Engineering
2015 - 2019 | CGPA: 7.87/10.0

DAV PUBLIC SCHOOL, KOTA
Class XII, CBSE
2015 | Percentage: 92.4%

ST. PAUL'S SCHOOL, SIROHI
Class X, CBSE
2013 | Cum. GPA: 10.0

LINKS

Github:// **prakharg24**
LinkedIn:// **prakharg24**
HomePage:// **cs1150245**

IMPLEMENTATIONS

Named Entity Recognition | **Code**
Sentiment Analysis - Neural | **Code**
Sentiment Analysis - Non Neural | **Code**
Face Morphing & Swapping | **Code**
Edge Detection & Quantization | **Code**
Clustering - DBScan & OPTICS | **Code**
EM in Bayesian Network | **Code**
Decision Tree and Neural Network | **Code**
SVM and Naive Bayes | **Code**
Regression and GDA Models | **Code**
k-Means vs SVM vs CNN | **Code**
Graph Partitioning - GGGP | **Code**
Parallel 2D Matrix Sorting | **Code**
MIPS Processor and Simulator | **Code**
Mobile Network Simulator | **Code**

COURSEWORK

Natural Language Processing | Machine Learning | Artificial Intelligence | Digital Image Analysis | Data Mining | Spl. Module In Artifcial Int. | Fundamentals of Language Sciences | Computer Networks | Analysis & Design of Algorithms | Parallel Computing | Linear Algebra | Prob. & Stochastic Processes

TECHNICAL SKILLS

PROGRAMMING LANGUAGES
C, CPP, Python, Java, OCaml, Prolog, VHDL, Visual Basic

FRAMEWORKS
OpenCV, OpenMP, MPI, Git, Tensorflow, PyTorch, Keras, Socket, Pandas, Numpy

PUBLICATIONS

Under Review

- Improved 3D Human Tracking using RGB-Depth Data. Submitted in CVPR 2019. Preprint not available.
- Nucl2Vec: Local alignment of DNA sequences using Distributed Vector Representation. Submitted in Bioinformatics. Read **preprint** .
- Deep Neural Networks in High Frequency Trading. Submitted in IEEE Transactions on Neural Networks and Learning Systems. Read **preprint** .

INTERNSHIPS & MAJOR PROJECTS

BACHELOR'S THESIS PROJECT | Pose Estimation and Tracking
Aug'18 - Present | Under Prof. Rahul Garg, IIT Delhi | Code

- A survey on Developing towards 3D Human Tracking using RGB-Depth data.
- Introducing a novel multi-modal Deep Learning model for 3D Human Tracking.
- Our current model outperforms the state of the art in 3D Human Pose Estimation.
- Tracking Yoga postures, which includes obscuring and unconventional extensions of the body, not possible using existing benchmarks.

DATA ANALYST | Deep Learning in HFT
May'18-July'18 | WealthNet Advisors, Delhi

- Literature Review and Performance comparison of existing ML techniques.
- Introduced a novel way of modeling the HFT problem statement.
- Developed and tuned a pipeline based on Deep NNs and mini batch training.
- Complete pipeline integrated to the company's trading module in C++.

SUMMER RESEARCH INTERN | Encoding Methods in Genomics
May'17-July'17 | Under Prof. Kolin Paul, IIT Delhi | Code

- Developed a novel encoding method, Nucl2Vec, for Genome variant calling.
- Based on Skip-Gram model, providing a distributed vector representation.
- About 3 times faster than the existing state of the art in NGS Read Alignment.
- 97% accuracy against the existing defacto standard BWA-MEM alignments.

MINOR PROJECTS

COMMUNITY SEARCH OVER LARGE SOCIAL NETWORKS
Aug'18 – Present | Data Mining, Prof. Sayan Ranu, IIT Delhi

- Literature Review project regarding influential community search techniques.
- Studying different advanced graph-based and index-based search algorithm.
- Correlating with social opinion and news propagation patterns. Read **preprint** .

ABSTRACTIVE SUMMARIZATION OF DIALOGUES
March'18 – May'18 | Fundamentals of NLP, Prof. Mausam, IIT Delhi | Code

- Pointer Generator Network and Coverage on top of Attention based model.
- Provide a graph structure to conversations from discourse relations using CRF.
- BLEU scores comparable to the state of the art. Check working model **here** .

GENOME VARIANT CALLING USING CNN
Aug'17 - Nov'17 | Minor Design Project, Prof Kolin Paul, IIT Delhi

- Designed a novel CNN based DNA alignment model achieving good speedups.
- Integrated with DAVI (DL based Single Nucleotide Variant identification).
- Collaborated with M.Tech students to complete the variant calling pipeline.

AUDIO TACTILE READER FOR VISUALLY CHALLENGED
Jan'17 - Apr'17 | Design Practices, Prof. M. Balakrishnan, IIT Delhi | Code

- Android App for real time finger gestures and movement detection.
- Windows app for automated data generation and mapping to Vector images.
- Presented live demo for visually challenged in IITD Open House. **Blog link** .