Yatin **Dandi**

Sophomore · Computer Science and Engineering

IIT Kanpur

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Education

Indian Institute of Technology Kanpur — *Kanpur, India*

Bachelor of Technology, Major in Computer Science and Engineering — *July. 2017 - Present*

- **Cumulative Performance Index : 10.0/10.0**

Interests

Deep Learning, Reinforcement Learning, Probabilistic Machine Learning.

Honors & Awards

2017	**Aditya Birla Scholarship**, Awarded to 15 students from all IITs	*Mumbai, India*
2017	**Academic Excellence Award**, Awarded for exceptional performace	*IIT Kanpur*
2016	**KVPY Scholarship, 2016**, Indian Institute of Science	*Bangalore*
2015	**NTSE Scholarship**, Government of India	*India*
2017	**All India Rank 135**, JEE Advanced 2017	*India*
2016	**Selected for Indian National Physics Olympiad**, HBCSE	*Mumbai, India*
2016	**Selected for Indian National Chemistry Olympiad**, HBCSE	*Mumbai, India*

Experience

New York Office, IIT Kanpur — *IIT Kanpur*

Machine Learning for Large Scale Logistics Platform, under Prof. Manindra Agarwal — *May 2018 - July 2018*

- Implemented a state of the art algorithm for online collaborative filtering based on Fast Matrix Factorization for Online Recommendation with Implicit Feedback (He et al.) using Numpy and improved the model with sentiment and frequency dependent weighting schemes.
- Used Kafka for real-time data processing and simulated interactions using locust.
- Implemented a recommender system based on deep autoencoders and compared the results with other models using metrics such as hit ratio.
- Implemented a Bidirectional LSTM model using Keras for sentiment analysis of user comments.
- Trained the Latent Dirichlet allocation model on Wikipedia articles for automatic extraction of topics.

Disentangled Representation Learning using Generative Models — *IIT Kanpur*

Course Project under Prof. Piyush Rai — *May 2018 - Present*

- Studied various approaches for learning disentangled representations of sequential data such as using using new adversarial loss terms, factorized hierarchical priors and exploiting the probabilistic model and architecture of the LSTM based autoencoder to promote disentanglement.
- Implemented a Variational Autoencoder model for disentangling of time invariant content and dynamics in sequential data (Mandt et al.) using Pytorch and experimented with modifications in the probabilistic model.
- Modified existing models for video generation such as MocoGAN, SVG with learned prior to improve generation and disentanglement
- Presently working on semi-supervised approaches to disentanglement and applications to speech data.

Social Situation Inference in Simple Animated Shapes — *IIT Kanpur*

Undergraduate Project under Prof. Nisheeth Srivastava — *May 2018 - July 2018*

- The aim was to characterise the nature and granularity of information about social interactions accessible to human observers from simple visual displays.
- Developed an animation engine capable of producing a vast range of social situations involving autonomous agents having long term and short term goals.
- The physical parameters were inspired by the valence-arousal model and were designed to represent independent factors, together covering the entire emotion space.
- The motion of autonomous characters was based on work by Reynolds, C. W. and the social force model for crowd behavior simulation.
- Currently running experiments with human subjects to determine how subjective attribution of emotions to specific situations varies as a function of the generative models parameters.

Deep Reinforcement Learning for Atari Games — *IIT Kanpur*

Association for Computing Activities, IIT Kanpur — *February 2018 - May 2018*

- Used Numpy to implement various reinforcement learning algorithms such as Dynamic Programming (Policy and Value iteration), Monte Carlo (Epsilon-greedy and off-policy), TD Learning (Q-Learning and SARSA) and Q-Learning with Function Approximation.
- Implemented Deep Q-Learning and Policy Gradient methods for Atari Games using PyTorch and OpenAI Gym.

Image Captioning with Visual Attention *IIT Kanpur*

Programming Club, IIT Kanpur *February 2018 - May 2018*

- Compared various CNN based models for image classification and implemented them using eager execution in Tensorflow.
- Implemented the model described in Show, Attend and Tell (Xu et al.2015) using Tensorflow's estimator API and evaluated the model on MS COCO dataset.

Microsoft code.fun.do hackathon *IIT Kanpur*

National-level hackathon winner *February 2018*

- Selected out of 120 students to represent IIT Kanpur at Microsoft Hyderabad center to showcase our project in their academia-industry collaboration event AXLE.
- Built an interactive interface using D3.js to display changing geopolitical relations and popularity of world leaders.
- Used Scrapy, a scraping framework to extract world news.
- Performed sentiment analysis and named entity-recognition on the extracted news to infer the effect of the concerned news on world politics.

POSITIONS OF RESPONSIBILITY

Programming Club *IIT Kanpur*

Secretary *April 2018 - Present*

- Helped conduct and organize Linux fest, introductory workshops and various hackathons.

Relevant Courses

Introduction to Programming - A	Probability for Computer Science - A*	Calculus and Real Analysis - A*
Discrete Mathematics - A	Logic for Computer Science - A*	
Computational Cognitive Science (audited)	Linear Algebra and ODE - A	

A*: grade for exceptional performance

Skills

Programming Languages	C, C++, Python, Javascript, MATLAB, Octave
Libraries and frameworks	Tensorflow, Pytorch, Scikit-Learn, Pillow, Keras, Numpy
Web	Flask, HTML, CSS, jQuery, MySQL
Utilities	Linux shell utilities, LaTeX, Git

Extra Curricular

- Delivered a talk on Brain-Computer Interface in an event organized by Science Coffee House, IIT Kanpur.
- Winner of Blackbox - a three hour high speed hackathon based on an Esoteric language organized by Programming Club IIT Kanpur.