ATISHAY JAIN

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LinkedIn GitHub Google Scholar

EDUCATION

IIT (Indian Institute of Technology), Gandhinagar *Expected April 2020*
Bachelor of Technology, Computer Science and Engineering CGPA: **10**

National Public School Indiranagar, Bangalore *March 2016*
Class XII Percentage: **95**

St. Joseph's Boys' High School, Bangalore *March 2014*
Class X Percentage: **92**

PUBLICATIONS

- D. Ritik*, G. Varun*, **J. Atishay***. Effect of Feature Hashing on Fair Classification. *ACM India Joint International Conference on Data Science and Management of Data (CoDS-COMAD)*, Hyderabad, India, Jan 2020 [link] [conference_link]

INTERNSHIPS

Caltech (California Institute of Technology); Prof. Mani Chandy; [May 2019 - July 2019]

- Developed algorithms in Python, for Caltech's IoTPy framework (which enables development of applications based on streaming data such as sensors, website/network monitoring, web-clicks, audio signals)
- Programmed heavy hitter algorithms such as Misra Gries, Count-Min Sketch and Count Sketch, as well as an online version of Principal Component Analysis (PCA), a dimensionality reduction algorithm
- Created audio processing libraries for real time modifications such as reverberations and pitch shifting

IIT Gandhinagar; Prof. Anand Sengupta; [May 2018 - July 2018]

- Designed machine learning models to de-noise gravitational waves using Keras and PyTorch
- Analysed neural network models, which use Recurrent Neural Networks (RNNs), Long Short Term Memory (LSTM) Cells and Auto-Encoders, to rapidly de-noise gravitational waves of varying signal-to-noise ratios

Hewlett Packard Enterprise; Mr. Suhas Shivanna; [June 2017 - July 2017]

- Programmed a Generic Data Mining Domain Modeller using HTML and JavaScript, which would make it easy to collect telemetry data from enterprise network equipment for further analysis
- Researched and presented highlights of Quantum Key Distribution to the security project team

UNDERGRADUATE RESEARCH PROJECTS (IIT GANDHINAGAR)

Denoising Gravitational Waves; Prof. Anand Sengupta; [Ongoing (August 2018 - Present)]

- Continuation of internship project at IIT Gandhinagar
  - Analyzed additional methods such as Generative Adversarial Networks (GANs) and attention in LSTMs to improve accuracy over previous models (RNNs, LSTMS and auto-encoders)
  - Testing applicability of model in obtaining accurate gravitational wave time delays over multiple detectors using PyCBC and NumPy

- Preparing a manuscript for submission to a peer-reviewed journal

Identifying Genes for Cancer Classification; Prof. Anirban Dasgupta; [Ongoing (August 2019 - Present)]

- Implemented and tested a singular value decomposition based algorithm on gene expression data to select genes for breast and lung cancer classification
- Collaborating with Zydus Hospital, Ahmedabad for extending the solution to other cancer types

Feature Hashing and Fairness; Prof. Anirban Dasgupta; [January 2019 - April 2019]

- Analyzed the effect of feature sketching on fairness using Python
- Inspected change in accuracy and fairness (equal odds and equal opportunity) of a Support-Vector Machine (SVM) model, after hashing the input data

Defending Neural Networks Against Adversarial Attacks; Prof. Nipun Batra; [January 2019 - April 2019]

- Explored state-of-the-art defenses such as Defense GAN, defensive distillation, and ensembles against adversarial attacks (FGSM attacks)
- Adapted (using Python and PyTorch) models used in denoising and data sketching for defense against adversarial attacks
- Benchmarked our models' performance against Defense GAN model in protecting a neural network

Detecting Insults in Social Commentary; Prof. Mayank Singh; [August 2018 - December 2018]

- Detected if a comment is insulting another participant of the thread
- Used Python libraries NLTK and ScikitLearn for text pre-processing (Natural Language Processing), and machine learning classifiers such as logistic regression, neural networks and SVMs

TEACHING ASSISTANT EXPERIENCE (IIT GANDHINAGAR)

Computing (Python) *Fall 2017, Fall 2018*
Writing Lab *Spring 2019*

TECHNICAL STRENGTHS

Programming Languages	Python, C, C++, Java, HTML, JavaScript, LaTeX
Libraries	PyTorch, Keras, ScikitLearn, NumPy, OpenCV

HONORS AND RECOGNITION

- Awarded the Scholarship for Academic Excellence for obtaining first rank in class, IIT Gandhinagar for the years 2018-19, 2019-20
- Appeared on the Dean's list for all semesters till date (Semesters 1 to 6)
- Placed in the top 0.2% of IIT-JEE (Joint Entrance Examination), 2016 with over 1.1 million candidates
- Won HP Code Wars, Bangalore, 2015 - a prestigious high-school coding competition conducted by Hewlett Packard where approximately 100 teams participated

SERVICES AND TALKS

- Co-founded Gandhinagar chapter of PyData with over 750 members and co-organised 4 meetups
- Presented the Applications of Machine Learning in PyData Gandhinagar Meetup

Extra-curricular activities: Avid interest in participating in quiz competitions, playing drums, singing and playing field hockey