Abhishek Pandya

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Education

University of Pennsylvania • Philadelphia, PA August 2019 – May 2023
School of Engineering and Applied Science GPA: 3.88/4.0
Bachelor of Science in Engineering in ***Computer and Information Science***

South Brunswick High School • South Brunswick, NJ September 2015 – June 2019
Attended NJ Governor's School • National Merit Scholarship Winner • Outstanding Math Student GPA: 4.5/4.0

Experience

CIS 160 (Discrete Mathematics) Teaching Assistant – University of Pennsylvania January 2020 – Present
Philadelphia, PA

- Held weekly office hours, created and graded homework assignments, and lead recitations of 20+ students.
- Topics Include: Set Theory, Proof Techniques, Combinatorics, Probability, Graph Theory.

Software Engineering Intern, Backend – Keep.id (Remote) July 2020 – Present

- Added features including: support for multiple document upload types (including PDF). PDF annotation, and envelope encryption. Achieved HIPAA Compliance.
- Used Java, Kotlin, and MongoDB to develop the server side of the web application.

Program in Combinatorial and Algorithmic Thinking June 2020 – August 2020

- Studied graduate-level randomized and approximation algorithms and different models of computation.
- Taught recitations on university-level discrete mathematics to high school students in India, China, and Africa.

Projects

Deep Q-Learning (DQN) June/July 2020

- Implemented the Deep Reinforcement Learning Algorithm DQN from scratch, described in the seminal Deepmind Paper in PyTorch.
- Works on toy enviroments (CartPole), and can play Atari games (Pong, Breakout)

Vanilla Policy Gradient (VPG) June 2020

- Implemented the Deep Reinforcement Learning Algorithm DQN from scratch, using average reward as baseline and reward-to-go.

Analysis of US Accidents Dataset – CIS 545 (Big Data Analytics) Final Project May 2020

- Performed data visualization and machine learning on Kaggle US Accidents Dataset to characterize accidents and predict severity. Used pandas, seaborn, and scikit-learn.

YouTube Recommendation Algorithm January 2020

- Created a recommendation algorithm using K-means to create clusters of YouTube videos, based on a TF-IDF analysis on their descriptions. Used pandas, scikit-learn.

Technical Skills

- Programming Languages: **Python** (PyTorch, pandas, scikit-learn), **Java** (javalin), OCaml, LaTeX, R, HTML/CSS
- Software/Technologies: Git/Github, MongoDB, Maven, SQL
- Non-Technical: Experience with teaching mathematics to students of all ages, for 7+ years.

Highlighted Coursework

- **Computer Science:** Data Structures and Algorithms, Big Data Analytics, Statistics for Data Science
- **Mathematics:** Engineering Probability, Linear Algebra, Game Theory, Multivariable Calculus, Discrete Math
- **Other**: Scaling Operations in Tech Ventures

Extra Curricular Activities

- **Co-President, One for the World** - Penn Undergraduate Chapter. We encourage students to pledge to donate 1% of their income to the world's most effective charities. Globally, we have donated our millionth dollar and as of Fall 2020, I've personally convinced 4 people to donate.