Ieshan Vaidya

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Education

- **New York University** — New York, NY
  Master of Science in Data Science; ***GPA****: 4.0/4.0* — *Aug 2018 – May 2020*
  Relevant Coursework: Introduction to Data Science, Probability and Statistics, Optimization and Computational Linear Algebra, Machine Learning, Big Data, Deep Learning
- **Indian Institute of Science Education and Research (IISER)** — Pune, India
  BS-MS Dual Degree in Physics; ***GPA****: 8.6/10.0* — *Aug 2013 – May 2018*
  Relevant Coursework: Quantum Mechanics, Quantum Information, Statistical Mechanics, Computational Physics, Nonlinear Dynamics, Graph Theory, Algorithms

Projects

- **Reinforcement Learning** || ***Python*** *(tensorflow, gym),* ***Git***
  Implemented imitation learning, dataset aggregation and policy gradient algorithms using Tensorflow for environments in OpenAI-Gym.
- **Game Recommendation System** || ***Python*** *(sklearn, requests, implicit, surprise),* ***Git***
  Designed a game recommender system based on data collected from the Steam Web API. Built multiple models (user-user similarity through Cosine and Pearson correlation, collaborative filtering and implicit matrix factorization) based on a rating indicator derived from the playtime distribution of users. Using precision@10 as the evaluation metric, improved the baseline model score of 0.11 to 0.57 using implicit model optimized by alternating least squares.
- **Measurement Problem in Health Workforce** || ***Python*** *(statsmodels, pandas, camelot, bokeh),* ***OCR*** *(Tesseract)*
  Extracted health workforce data from unstructured PDF sources using ocr (Tesseract) along with text parsing (Camelot) and designed indicators that highlight discord in the sanctioned, required and positioned workforce across years in India. Designed an interactive choropleth map using Bokeh (Python) that visualizes the trends across years as a heatmap animation.
- **Soccer Predictor** || ***Python*** *(sklearn),* ***Git***
  Built a simple soccer predictor that uses the exponentially-weighted expected goals of teams coming to a match to predict the outcome of the match. Improved on the baseline model of predicting home-wins by 5%.
- **Web Scraping** || ***Python*** *(requests, BeautifulSoup, selenium)*
  Extracted historical soccer data from static web-pages using Requests and BeautifulSoup and dynamic web pages using Selenium.

Experience

- **New York University** — New York, NY
  Graduate Assistant : Physics of Quantum Computing, Applied Physics Department — *Jan 2019 - May 2019*
- **Indian Institute of Science Education and Research (IISER)** — Pune, India
  Master's Thesis Research : Hamiltonian Engineering in Quantum Spin Networks — *June 2017 - May 2018*
  - **Star Network Topology**: Designed a star network topology from an all-connected quantum network using the technique of filtered Hamiltonian engineering. By designing optimal magnetic field sequences, the average effect of the full procedure is to decouple the circumferential interactions whilst retaining the radial interactions.
  - **Information Transport**: Designed quantum information transport models such as chain, router from spin networks that achieved perfect transfer fidelity whilst placing minimal structural requirements on the network. Implemented a modular routine that allowed combination of models with minimal loss of transport fidelity.
  - **Simulation**: Performed simulations of quantum transport models using MATLAB and Python.

Skills

- **Languages**: Python, MATLAB, SQL, MapReduce, Hadoop, Spark
- **Data Science**: NumPy, SciPy, Pandas, MatPlotLib, Scikit-learn, Tensorflow, PyTorch, Sqlite, Jupyter
- **Tools**: Git, LaTeX, Inkscape, Office

Certifications

Machine Learning (*Coursera*), **Deep Learning Specialization** (*Coursera*), **Relational Algebra** (*Stanford Online*)

Achievements

- **INSPIRE Scholarship**: Awarded by the Ministry of Human Resource and Development, Government of India

Publications

- **Solving the Measurement Problem of Health Workforce - A Longitudinal Analysis of Indian Rural Healthcare**: Lancet Global Health