Sagar Patel

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Education

New York University, New York, NY — May 2022
Master of Science, Computer Engineering
- *Relevant Coursework: Big Data, Machine Learning, Deep Learning, Machine Learning for Cybersecurity, Data Structures and Algorithms*

PES University, Bangalore, India — May 2019
Bachelor of Technology, Electrical and Electronics Engineering
- *Relevant Coursework: Digital Image Processing, Neural Networks*

Technical Skills

Programming Languages:	Python; Java; C; SQL; R
Big Data:	Hadoop; Apache Spark; NoSQL (Relational and Non-relational); Hive
Other Tools:	HTML5; AngularJS; Git; GCP; AWS; Unreal Engine; Tableau; Tensorflow; Keras; PyTorch; PyGame
Expertise:	Predictive Modeling; Statistical Analysis; Decision Analytics; A/B Testing; Data Visualization

Professional Experience

New York University Career Services | *Teaching Assistant (Data Science)* — June 2021 – Present
- Conducting Data Science Bootcamp for a class of 300+ graduate and over 120 undergraduate students.
- Creating semi-personalized course plans that address specific concepts of Data Science and Machine Learning and providing multiple hands-on programming exercises and mathematical problems.
- Mentoring several group projects and capstone research for the Bootcamp as well as academia.

NYU Game Innovation Lab | *Research Assistant* — May 2021 – August 2021
- Under the guidance of Professor Julian Togelius, developed and trained an Artificial Intelligence-backed GAN which uses procedural learning to generate aesthetic terrain and village settlements in Minecraft.
- Created an AI bot to play Othello using Monte Carlo Tree Searching algorithm. The GUI was developed using the Angular framework.

Unacademy | *Data Scientist (Business)* — August 2019 - March 2020
- Worked directly with the Head of Content Operations to set up a feedback NPS process operations and optimizations; resulting in an improvement of overall NPS by 10%
- Analyzed data sets and created daily and weekly reports on Tableau which were shared with the senior leadership team.
- Optimized the operations which resulted in achieving 150% targets in 20 days.
- Built dynamic dashboards to analyze the daily inflow of content and productivity of the team.

Columbia Asia Hospitals | *Machine Learning Intern* — January 2019 – June 2019
- Worked with the Cardiology Department to create a platform that uses Machine Learning to perform Cardiac Auscultation without any manual intervention. The results achieved a cost reduction of nearly 70% in equipment and travel time for the patients, thereby making cardiac testing more streamlined and efficient in remote locations.
- Developed a Recurrent Neural Engine that uses over 800,000 test audio samples extracting 32 features from them. An overall RMSE of 0.88 was achieved.

Projects

Ling-spam Email Spam Filter (Python, SQL) — Fall 2021
- Modeled an e-mail spam filter using a Naive Bayes and SVM-based classification on the popular ling-spam dataset. For the Adversarial attacks, a report of the false-negative rate of the baseline NB classifier before and after the attacker's modifications to test emails was generated. The false-negative rate for the Bernoulli NB classifier was reported to be 0 and the false-positive rate was 0.38.

Formula1 Race Winner Predictor (Python) — Summer 2021
- Using Random Forest Regressor, developed a model which can predict the winner of a Formula1 race for the 2019 season using a Supervised Learning approach verified over 6 feature spaces.
- The generated model was able to have an accuracy score of 71.4% predicting 15 race wins out of a 21 race calendar accurately.

Chest X-ray Abnormalities Detection (Python) — Spring 2021
- Developed and trained an unsupervised model that automatically localizes and classifies 14 types of thoracic abnormalities using local clustering of chest radiographs. The sample dataset size was over 18,000 fMRI un-processed chest x-ray images.
- Facebook's detectron2 model was used for object detection and the model was able to classify with an RMSE of 0.98.

Music Recommendation System (Hadoop, Spark; Python, SQL) — Spring 2021
- Created a recommendation system using collaborative filtering and Apache Spark's ALS model-based technique for the Million Song Dataset. The model was trained over 100% of the data with a MAP score of 0.05.

Stock Trading Web and Mobile Application (Node.js, Angular, AWS; Android, Java) — Summer 2020
- Developed a responsive single-page web application and Android application that displays real-time stock prices (Tiingo API), stock charts (Highcharts API), and news (News API), with the ability to search for, watch over and purchase stocks.
- Constructed API endpoints to fetch JSON data using Node.js/Express, built the UI for a web app using Angular framework.

Activities

Member, Bridges International (NYC) — January 2021 – Present
Chairperson and Founder, IEEE Robotics and Automation Society (PES University) — March 2019 – February 2020