**Kishen Sivabalan**

3820, Locust Walk, Philadelphia, PA 19104 | (267) 239-7177 | [kishens](mailto:kishensivabalan.k@gmail.com)@seas.upenn.edu| [linkedin.com/in/kishen-sivabalan/](https://www.linkedin.com/in/kishen-sivabalan/) | [github.com/](https://github.com/Kishen-sivabalan)kishensiv

**EDUCATION**

**University of Pennsylvania, College of Arts and Sciences** – Philadelphia, PA (Expected) **May 2023**

*Bachelor Science in Engineering in Computer and Information Science*  *GPA: 3.91/4.00*

**Relevant Coursework:** Probability, Statistical Inference, Computational Linear Algebra, Big Data Analytics, Databases for Analytics, Data Structures and Algorithms, Programming Languages and Techniques, Scalable Cloud Computing

**TECHNICAL SKILLS**

**Languages:** Python, R, MS Excel, VBA, Java ,JavaScript, C, OCaml

**Other Skills**: SQL(MySQL, Oracle SQL), Python(Pandas, NumPy, Scipy, sklearn, NLTK, tensorflow, Pytorch, matplotlib/seaborn etc), R(dplyr, ggplot, lubridate, mlr), DynamoDB, AWS, Apache Spark, Git

**PROFESSIONAL EXPERIENCE**

***Summer Research Engineer* May 2021 - September 2021**

*Professor Jonah Berger, Associate Professor of Marketing, The Wharton School*

* Assisted Professor Berger on a number of projects aimed at extracting insights from text data for applications in marketing and consumer psychology.
* Trained and performed Hyperparameter Optimization on numerous machine learning models (Logistic Regression, Random Forest, Decision Trees) to predict the presence of hedges in conversations and written text.
* Conducted Next Sentence Prediction on a number of newspaper articles and movie scripts using a Bidirectional Encoder Representation from Transformers (BERT) model.
* Assigned probability scores to pairs of sentences in newspaper excerpts using a pre-trained BERT model, which were inversely correlated to how “surprising” an excerpt is considered to be.

***Junior Analyst*** **March 2021 - April 2021**

*AI@Penn Venture Fellows*

* Partnered as a group with a seed-stage veterinary startup to conduct data analysis and create predictive models based on existing pet patient data.
* Created machine learning pipelines to predict diagnoses, as well as the need for a follow up appointment based on commonly occuring keywords in appointment descriptions.
* Created a multi-label classification model to predict a list of possible prescriptions (based on veterinarian-labeled training data) to aid veterinarians within appointments.
* Dealt with heavy class imbalance among pet patients by oversampling and collecting auxiliary data on diagnoses and medication from PetMD and the FDA.

***Teaching Assistant*** **January 2022 - Present**

*CIS 110: Introduction to Computer Programming, University of Pennsylvania*

* Instructed 15+ students in weekly recitations on introductory programming concepts, including data types, loops & conditionals, recursion, arrays & linked lists and objects.
* Assisted in managing course infrastructure, by updating the course website to include new weekly content, releasing homework assignments on Codio and Gradescope, and configuring autograders.

**SELECTED PROJECTS**

***Bank Marketing Deposit Subscriptions Prediction***

*python, colab, pandas, numpy, sklearn, xgboost seaborn, matplotlib*

* Sourced a Kaggle Dataset from a Portuguese Banking Institution to predict whether clients were likely to subscribe to a term deposit based on relevant factors.

Conducted Exploratory Data Analysis and PCA, before building a Random Forest Model with elastic-net regularization and hyperparameter optimization for prediction (98.2% accuracy)

***PennBook***

*Java, JavaScript, Node.js, EJS, socket.io, dynamodb, Apache Livy, HTML/CSS, Bootstrap*

* Built a miniature version of Facebook in a team of four using Java, JavaScript, HTML/CSS and Bootstrap, with the use of DynamoDB to store user data.
* Developed PennBook’s chat function for individual and group chats amongst friends on PennBook, using Node.js and Socket.IO to handle asynchronous calls.