Ben Badnani

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EDUCATION

Boston University *Sep. '18 –*

Bachelors of Science in Computer Science and Applied Mathematics

- Courses: Computer Systems, Stochastic Processes, Algorithms, Sketching Algorithms, Time Series

Variational Inference Researcher *Sep. '21 – Dec. '21*

- In cooperation with the DRP program, performed independent research on variational inference and its applications to Bayesian neural networks with a paired graduate Math student from the program.

EXPERIENCE

TAMID, Boston University *Jan. '22 – Present*

Vice President, Tech Director

- Coordinated a targeted marketing and outreach campaign to promote the club to over 300 people in the BU computer science community by leading info sessions, working with directors from other clubs (such as the BU data science club), and working with TAMID nationals.
- Assigning, overseeing and assisting project managers in finding internships for their teams of software engineers, developing client relations, and delivering on the proof of concept models as specified by the client companies.
- Leading weekly, hour long, sessions to get progress updates from the project managers, and work with the software engineers directly to accelerate development and stay on track to produce the company deliverable in a timely manner.

CBS News, Boston *Sep. '21 – Dec. '21*

Data Science Intern - Python

- Statistical inference and correlation of broadband access with neighborhood characteristics (race composition, median income etc.) per zip code and block group, using US census datasets across a range of years.
- Implemented an extremely fast, custom logistic regression model, using Pytorch lightning, that could predict with 88.68% accuracy (on the test set) the percentage of internet access for each block group within a range of 10 points, using solely the demographic composition of the block group as input.
- Used choropleth, geopandas, folium, and more to create an interactive, clickable map of Boston, with color coded popup icons that yielded demographic, monetary, and locational information about the area when clicked, per the client's request.

Adverifai, Tel Aviv *Sep. '21 – Dec. '21*

Machine Learning Engineer Intern – Python (Pytorch/Spacy/NLTK/Scikit-learn), Azure

- Used computer vision, NLP, and deep neural networks to map advertisements to products with a confidence score, and predict categories for ads that were not mapped to products, in a scalable fashion.
- Wrote a custom accuracy function to allow the model to handle labels that were unavailable in the given training data, allowing the model to designate the label 'unknown' if the categorical distribution across all classes were less than a specified confidence threshold, per the company's request.
- Improved the extensibility and scalability of the preprocessing stage of the model by implementing scikit-learn custom transformers, nested pipelines and column transfers, to customly preprocess all features simultaneously yet independently in one line of execution.
- Improved preliminary accuracy of model from 81.62% to 86.87% on the validation set by wrapping the Pytorch neural network as a scikit object using skorch, and consequently performing a Bayesian search on selected hyper-parameters using skopt.

SKILLS

Python (>= 2.7, incl. Cython), C (C99), Bash, SQL, R, Regex, Java, Javascript (incl. react.js), Solidity, x86 Assembly, WebAssembly.

PROJECTS

Bouncer - C/Python

A sketching algorithms Python library, built in C, using the C/Python API, that allows you to approximate information about data given in the form of a stream.

6502 Simulator - C/WebAssembly/Javascript/Python

An interactive 6502 CPU emulator, using binary images as input to simulate the execution of opcodes in memory.