ASHISH BHAT

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EDUCATION

Virginia Polytechnic Institute and State University: Blacksburg, Virginia. Expected Graduation: May 2023
Master of Engineering in Computer Science & Applications **CGPA: 4.0/4.0**
Relevant Coursework: Intermediate Data Structures and Algorithm Analysis, Data Analytics, Social Media Analytics, Information Visualization, Software Engineering, Web Application Development, Machine Learning with Big Data, Introduction to Urban Computing.

Thadomal Shahani Engineering College (University of Mumbai): Mumbai, India. June 2021
Bachelor of Engineering in Computer Engineering **CGPA: 8.69/10**
Relevant Coursework: Data Structures, Advanced Algorithms, Software Engineering, Mobile App Development, Web Design, Database Management System, Big Data & Analytics, Artificial Intelligence & Soft Computing, Operating System, Distributed Computing, Machine Learning, Data Warehousing and Mining, Cloud Computing, Human Machine Interaction.

TECHNICAL SKILLS

- Web Design: RESTful Web Services (API), Spring Boot, JavaScript, React.js, Node.js, Next.js, Redux.js, Flask, XML, PHP, CSS, HTML, HTTP, DOM, AJAX, D3.js, JSON.
- Data Base Management: MySQL, MongoDB (NoSQL).
- Programming languages: Java, Python, C, R.
- Libraries: Tensorflow, OpenCV, Keras, Scikit-learn, Pandas, NumPy, SpaCy, NLTK, Plotly, Seaborn, Matplotlib, Networkx, Tweepy.
- Others: Git, Heroku, Tableau, Maven, Postman, Jira.

PROFESSIONAL EXPERIENCE

Staples Inc, Framingham: *Software Engineer Intern* **June 2022 – August 2022**
- Redesigned the store filter component for the Staples website by adding the functionality for users to select multiple stores within a desired radius, using React.js, Redux.js, and Node.js.
- Developed RESTful web services (API) using Java and Spring Boot for the redesigned store filter component, impacting **60%** of the traffic.

1 Martian Way Corp, Mumbai: *Deep Learning Intern* **November 2019 – December 2019**
- Developed a software to locate, segregate, and enumerate the products in a given image using computer vision and deep learning, subsequently deploying the application for ACC India (cement manufacturer) and a local supermarket.
- Trained a FRCNN Inception V2 model on more than 1000 images for object detection, achieving an accuracy of **98%** and deployed it as a web application using Flask.

ACADEMIC PROJECTS

Analysis of Google Play Store Applications
- Designed a web-based interactive visual data story that allowed the audience to gain insights about the trends in the android market, helping them create successful applications, and hosted it as a public website using GitHub Pages.
- Employed the design sprint process, obtained the data, came up with the data story, sketched the visualizations, implemented it using D3.js, HTML, CSS, Javascript and evaluated the results.

Intermediate Data Structures and Algorithm Analysis
- Implemented skip list to store and query (dump, region search, intersections, etc) a collection of rectangles and subsequently augmented it with the implementation of PR Quadtree for making the spatial queries efficient.
- Implemented external sorting algorithm using replacement selection and multiway merge algorithms.

Photo Sharing Application
- Developed an application for users to post photos with like and comment functionalities, using React.js, Redux.js, Node.js, Express.js and MongoDB.
- Implemented login feature using JSON Web Tokens and Google OAuth, as well as pagination and search functionalities.

Image Captioning using Ensemble Model
- Implemented an encoder-decoder architecture for image captioning, using computer vision and natural language processing, creating a graphical user interface using tkinter.
- Encoder consisted of an Inception V3 model while a combination of transformer encoding and bidirectional LSTM formed the decoder, resulting in a **7%** increase in BLEU score as compared to individual models.

Movie Recommendation System
- Engineered a hybrid system for movie recommendation by incorporating content-based filtering with collaborative filtering, decreasing the loss by **8%**.
- Designed a graphical user interface using tkinter, and implemented the functionality for users to rate movies, which predicted other movies' estimated ratings.

PUBLICATIONS

Bathija Pranav, Chawla Harsh, **Bhat Ashish**, Deshpande Arti (2022) Image Captioning Using Ensemble Model. In: Tuba M., Akashe S., Joshi A. (eds) *ICT Systems and Sustainability*. Lecture Notes in Networks and Systems, vol 321. Springer, Singapore. https://doi.org/10.1007/978-981-16-5987-4_35