

# 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, Mobile Application Development, Machine Learning with Big Data, Models of Human Computer Interaction, 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: JavaScript, React.js, Node.js, Next.js, Redux.js, XML, Flask, PHP, CSS, HTML, HTTP, DOM, AJAX, D3.js, Spring Boot.
- 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: RESTful Web Services (API), JSON, Git, Heroku, Tableau.

## PROFESSIONAL EXPERIENCE

**Staples Inc, Framingham: Software Engineer Intern**

**June 2022 – Present**

- Redesigned the store filter component for the Staples website using React.js, Redux.js, and Node.js by adding functionality for the user to select multiple stores within a desired radius.
- Developed RESTful web services (API) using Java and Spring Boot for the redesigned store filter component.

**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 a supermarket and ACC India (cement manufacturer).
- 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 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 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 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%**, and created a graphical user interface using tkinter.
- Employed a functionality for the user to rate movies, and 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](https://doi.org/10.1007/978-981-16-5987-4_35)