

SHAIFALI VASHISTHA

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EDUCATION

Indian Institute of Technology Madras, Chennai, India

Dec '20 - Present

B.S. in Data Science & Its Applications

GPA: 7.8

Central Board of Secondary Education, Delhi, India

CBSE Intermediate, Percentage: 80.4%

2017-2018

CBSE Matriculation, CPI: 10/10

2015-2016

KEY PROJECTS

Automatic Text Summarizer | *Natural Language Processing*

Winter '23 - Present

- Implementing an interactive text summarizer that automatically produces a summary of a document
- Integrating an approximate summarization model to the original model to guarantee interactive speeds for large text collections of multiple topic-related documents to keep the user engaged in the process

Face Detection | *Computer Vision*

Winter '23

- Used **Viola Jones algorithm** for fast face detection and improved performance using **AdaBoost**
- Implemented the algorithm using **Haar Cascades & Integral images** and achieved 87% accuracy

Eigen Face Recognition System | *Image Processing*

Fall '22

- Implemented quick face recognition & reconstruction using **eigen faces** obtained from **PCA & SVD**
- Represented facial images from the **ORL Dataset** as n -dimensional vectors and implemented dimensionality reduction by obtaining their eigenvectors acting as key signatures in the recognition task

Mentorship platform Application | *Software Engineering*

Fall '22

- Created a mentorship platform for IIT Madras BS students using **Flask & RESTful API** for back-end, **Jinja 2** with **HTML, CSS & bootstrap** for user interface based on **Agile** approach
- Collected user requirements as user stories through online interviews, designed the interactive wire-frame of the application using **figma** and used **Jira** Software for keeping track of sprint meetings

KanBan ToDo Application | *Application Development*

Fall '22

- Developed a python web application using **Flask-SQLAlchemy** and **SQLite3** for managing and visualizing tasks, setting deadlines with daily task reminder emails and monthly statistical reports
- Used Flask framework in python for back-end development, **Vue-CLI** for front-end development and **Celery & Redis** for **caching** & implementation of triggered and scheduled tasks in the application

SAT Solver | *DPLL Algorithm*

Fall '22

- Implemented the NP-Complete problem of **SAT Solver** which takes **CNF** and gives a solution
- Used **DPLL algorithm**, a famous backtracking algorithm to find a solution for the given CNF

Financial Position Analysis | *Business Data Management*

Fall '21

- Analyzed the **revenue trend** and **net profit trend** over the last 5 years for the State Bank of India
- Conducted numerical analysis of key **financial ratios** & derived insights on the financial performance
- Compared the financial performance of the bank to its peers and documented the results in a report

*Use URL www.shailivashistha.github.io/ in case hyperlinks don't work

SCHOLASTIC ACHIEVEMENTS

- Completed **Diploma in Data Science & Programming, 2022** from **IIT Madras**
- Awarded **S grade** in Mathematics, Modern Application Development, and Business Analytics
- Achieved **97.8** percentile in **AIIMS-MBBS 2018** among 374,000 candidates
- Secured **90** percentile in **NEET (UG) 2018** among 1.59 million candidates

POSITIONS OF RESPONSIBILITY

Teaching Assistant | Modern Application Development

Spring '23

- Will be responsible for organizing regular doubts solving sessions, handling course-related queries, conducting programming sessions, and preparing mock tests & solutions for a batch of 50+ students

Mentor | Modern Application Development

Fall '22

- Organised regular doubt-clearing sessions and managed weekly assignments for a batch of 21 students

OTHER PROJECTS

Self Tracker Application | *Application Development*

Summer '22

- Created a web application to log and manage boolean and numeric data for daily activities using Flask with Jinja2 templates for backend and HTML5, CSS & Bootstrap for frontend development
- Modified The Self Tracker from a static web application to an advanced dynamic web application using Vue-CLI for frontend development, and flask for backend development of the application.

Predictions from Data using sklearn | *Machine Learning Practice*

Spring '22

- Designed and trained various models using **sklearn** to make predictions over data and detect outliers

Model Training from Scratch | *Machine Learning Techniques*

Spring '22

- Implemented various machine learning algorithms such as Logistic Regression, Gaussian Naive Bayes, Softmax Regression, KNN, Soft Margin SVM and Kernel SVM, and ANN to train models

E-Commerce Trend Analysis | *Business Data Management*

Fall '21

- Used a dummy data corresponding to an E-Commerce company for **trend analysis** of the firm
- Analysed distribution of revenue, stock price, and volume trends using **Pareto** and **scatter plots**
- Utilised Google sheets to present various trends in line charts, bar charts, and combination charts

SQL Query Writing | *Database Management*

Fall '21

- Wrote various queries in **PostgreSQL** to extract and display data from the given datasets

TECHNICAL SKILLS

Programming Python, C++, SQL, JAVA, Vuejs, MATLAB, Octave, bash

Libraries Pytorch, NumPy, Pandas, SciPy, SKLearn, Flask, BeautifulSoup, tabula

Softwares Linux, Github, PostgreSQL, MS Excel, SQLite, OpenRefine, QGIS, Redis, L^AT_EX

RELEVANT COURSES

ML & AI NLP (NPTEL)*, Search Methods for Problem-Solving (AI), Deep Learning, Machine Learning Techniques, Machine Learning Practice, ML Foundations

CSE Software Testing*, Ethical Hacking (NPTEL)*, Software Engineering, Cloud Computing (NPTEL), Data Structures & Algorithms, Database Management Systems, Programming in Java, System Commands, Advanced Application Development

Other Courses Discrete Mathematics*, Market Research*, Industry 4.0*, Data Visualisation & Design*, Tools in Data Science, Business Data Management, Business Analytics, Mathematics I & II, Statistics I & II

*Ongoing courses in Spring 2023

EXTRACURRICULAR ACTIVITIES

- Participated in **Datathon** hosted by **IBM Zurich** and **Shooting Stars Foundation** (2022)
- Participated in **Capture the Flag** contest at **Shaastra**, organized by IIT Madras (2022)
- Participated in **Reverse coding contest** at **Shaastra**, organized by IIT Madras (2022)
- Ardent Quizzer in many intra-school science and general knowledge quiz competitions (2014-2018)