SHREYA RAJPAL

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SUMMARY

Passionate about AI, machine learning, and deep learning, I am a highly driven individual with a strong technical background and a knack for innovation. As the Technical Head at IEEE SSIT VIT and an Open Source Enthusiast, I actively pursue opportunities to contribute to the tech development field. Currently pursuing a B.Tech. in Software Engineering, I possess expertise in front-end development(web and app) and possess excellent interpersonal skills to inspire and collaborate effectively within teams. My goal is to leverage my skills and passion to make meaningful contributions to cutting-edge projects in the field of AI and technology.

ACADEMIC DETAILS

Year	Degree/Board	Institute	GPA / Marks (%)
2025	Bachelor of Technology	Vellore Institute of Technology, Vellore, Tamil Nadu, India	8.72 (5 sem)
2021	CBSE	GD Goenka Public School, Delhi, India	89.50
2019	CBSE	Prudence School, Delhi, India	90.6

HIGHER EDUCATION EXPERIENCE

GD Goenka Public School, Model Town, Delhi

Central Board of Secondary Education *Supervisor: PGT Ms. Karuna Gupta*

School Project: Advice.didi, the multi-purpose software project developed to support and provide help in improving overall health of user in the face of pandemic via a computerized chat-bot. Advice.didi, developed with the aim to guide the end-user through tough times and promote their mental stability.

- Implemented tokenization, stemming, and speech tagging in an NLP algorithm to give a user-profile summary or "advice" according to user inputs; Tech Stack used: Python

INTERNSHIPS

I. University of Hamburg Aug 2023-Sep 2023

a. Company overview: The Semantic Systems (SEMS) research group at Hamburg University focuses on Knowledge Graphs and the Semantic Web, striving for machine-human understanding.
b. Role: Developed a Pangu-inspired system to identify one-hop relations between knowledge graph entities.
c. Worked and successfully extracted and ranked candidate pairs from the graph using Bert CLS embeddings.
d. Achieved 100% accuracy on 200 DBLP QuAD questions, scoring F1 0.2175 in 500 questions test dataset for Scholarly QALD @ISWC 2023.
e. Gained proficiency in sparql, s-expressions, and knowledge graphs.
f. Utilized NLP models, especially Bert, to refine semantic relations.

II. Resshu Connect Pvt Ltd. Jan 2023-Mar 2023

a. Company overview: *Apna Konnect* is a locality-based social networking platform that helps you make real-world social connections.
b. Role: Built an app with 100+ downloads on Google play store and 5-star rating.
c. Worked and successfully solved multiple bugs and added features including profile functionality, deep linking with firebase, notifications; Collaborated in a team of 7 using version control as Git.
d. Learned and enhanced various app development skills using React Native and firebase.

III. Shafance Pvt Ltd. Oct 2022-Nov 2022

a. Company overview: vision to be a Shadow of Guidance for young students. Provides educational content for students in classes 6^{th}- $9^{th.}$
b. Role: Built main website scalable for 1k+ users and designed it as an education-based UI UX with agile methodology. Collaborated in a team of 3 using version control as Git
c. Skills acquired: web development using HTML, CSS, SCSS, Bootstrap CSS, JQuery and Bootstrap JS.

IV. Quantum Learning (AEP Microsoft) Apr 2022-Sept 2022

a. Skills acquired: Hands-on Supervised and unsupervised machine learning topics
b. Role: Built a project using supervised machine learning methods and implemented to visualize data.

V. Equigate Pvt. Ltd. (Citizen Innovation Lab) Nov 2021-Mar 2022

a. Citizen Innovation Lab*: Awarded second position in the CIL hackathon with the Equigate Team. Further got selected for the sprint plan in the CIL Incubation and acceleration programs.*
b. Company overview: Delivers safe drinking water solutions. Drinking water quality tests are done in accordance with IS10500-2012, customized water purification systems for households and institutions, and emergency assistance during floods and storms.
c. Skills acquired: Team management, presentation skills, independent project planning.

PROJECTS

I. EcommHub

a. Engineered a full-featured ecommerce web application with a shopping cart, product reviews, ratings, and a top products carousel using MERN stack.
b. Implemented advanced features like product pagination, search functionality, user profiles with order history, and admin panels for product and user management.
c. Integrated a comprehensive checkout process with shipping and payment options, including PayPal and credit card integration.
d. Developed a database seeder for products and users, showcasing strong backend development skills and attention to system scalability and usability.
e. Tech Stack used: *MongoDB, Express.js, React.js, Node.js (MERN), with PayPal API for payment processing.*
f. Link to Github Repository: https://github.com/Shreyaar12/Ecommerce-mern
g. Project Link: https://ecommhub.projectsbyshr.in/

II. Computer Vision: Finger Detection and Counting

a. Developed a real-time hand recognition and finger counting application using computer vision techniques in Python with OpenCV.
b. Implemented background subtraction, image thresholding, and contour detection for accurate hand segmentation and finger identification.
c. Created an intuitive user interface to display the number of fingers detected in the live video feed from the camera.
d. Tech Stack used: *Python, OpenCV, NumPy, Scikit-learn.*
e. Project Link: https://github.com/Shreyaar12/Finger_Detection_CV/

III. Transformer Network Application: Named Entity Recognition and Question Answering

a. Developed advanced applications using Transformer Networks focusing on Named Entity Recognition (NER) and Question Answering (QA) using the Hugging Face library.
b. Fine-tuned pre-trained Transformer models to identify named entities in text and to perform extractive question answering on custom datasets.
c. Demonstrated proficiency in natural language processing techniques, including data cleaning, tokenization, and model optimization for NER and QA tasks.
d. Tech Stack used: *Python, TensorFlow/PyTorch, Hugging Face Transformers library.*
e. Project Link: https://github.com/Shreyaar12/Transformer-Network-Application

IV. Udacity- Image Classifier

a. Developed a PyTorch-based image classifier.
b. Used 102 category dataset of commonly occurring flowers in the UK, with each class containing 40-258 images.
c. Converted the classifier into a command-line application.
d. Demonstrated strong problem-solving skills and attention to detail.
e. Tech Stack used: *Python modules including PyTorch and Matplotlib.*

f. Link to Github Repository: https://github.com/Shreyaar12/UdacityIMGclassifier/

V. Code Canvas (GSSOC'23)

a. Project Admin of Github repository Games and Go at GSSOC 2023
b. Designed and developed a hub of 20+ Open Source Projects based on basic tech stacks for beginners
c. Learned code review and enhanced team work skills by working with 50+ collaborators
d. Handled over 250+ issues and 100+ pull requests in our repository as the Sole Project Admin.
e. Tech stack used: *HTML, CSS, Bootstrap CSS, JQuery and JS.*
f. Link to Github Repository: https://github.com/ssitvit/Code-Canvas/

VI. Foodico- One stop solution to your dining needs

a. Designed UI UX based on restaurant and food related websites
b. Collaborated and worked with agile methodology in a team of 5 as the team lead.
c. Tested and reviewed the working of entire website manually based on test cases mapping through modules andseverity.
d. Tech Stack used: *HTML, CSS, SCSS, Bootstrap CSS, JQuery and JS.*
e. Link to Website: https://shreyaar12.github.io/Foodico/

VII. SHAFANCE- Shadow of Guidance

a. Designed UI UX based on education
b. Learned and implemented various JS and CSS, libraries and frameworks like JQuery, Bootstrap JS and SCSS.
c. Collaborated and worked diligently in a team of 3 using version control system Git
d. Tech Stack used: *HTML, CSS, SCSS, Bootstrap CSS, JQuery and Bootstrap JS.*
e. Link to Website: http://www.shafance.com/

VIII. Games and Go (Hacktober Fest 2022, GSSOC'23)

a. Project Admin of Github repository Games and Go at GSSOC'23
b. Maintainer of Github repository Games and Go at Hacktober Fest 2022
c. Designed and developed UI UX for gaming website.
d. Learned code review and enhanced team work skills by working with 50+ collaborators
e. Handled over 250+ issues and 100+ pull requests in our repository as the Sole Project Admin.
f. Tech stack used: *React v6, React-Router*
g. Link to Github Repository: https://github.com/ssitvit/Games-and-Go

IX. Codeial Social Media App

a. Learned to implement various features of React-redux and collaborate with backend.
b. The app consists of authentication using Jwt tokens, chat using websocket client, posts, user profile, addingfriends and other features.
c. Tech stack used: *React v6, React-redux, Websocket, Backend*
d. Link to Github Repository: https://github.com/Shreyaar12/Codeial-social-app

X. Movie App

a. A basic functionality web app for browsing through latest movies and implemented the functionality of favoriting and search through this app.
b. Learned to implement React-redux and various api.
c. Tech stack used: *React v6, React-redux.*
d. Link to Github Repository: https://github.com/Shreyaar12/Movie-app

RESEARCH PAPERS

I. BERTologyNavigator: Advanced Question Answering with BERT-based Semantics

a. Co-authored a paper titled "BERTologyNavigator: Advanced Question Answering with BERT-based Semantics," published in the Joint Proceedings of Scholarly QALD 2023 and SemREC 2023 co-located with the 22nd International Semantic Web Conference (ISWC 2023) in Athens, Greece.
b. Developed the BERTologyNavigator, a two-phased system integrating knowledge graphs and language models using BERT embeddings for advanced question-answering tasks.
c. Conducted extensive research focusing on relation extraction techniques within the DBLP Knowledge Graph (KG), achieving an F1 score of 0.2175 on the DBLP QuAD Final test dataset and 0.98 F1 score on a subset of the DBLP QuAD test dataset.
d. Arxiv Link to the Paper: [2401.09553] BERTologyNavigator: Advanced Question Answering with BERT-based Semantics (arxiv.org)

II. Automatic Number Plate Recognition System using GPU

a. Explored state-of-the-art in Automatic Number Plate Recognition (ANPR) systems, focusing on current methodologies and key factors affecting system performance.
b. Investigated the impact of using more powerful processors, such as GPUs over CPUs, to enhance system efficiency.
c. Highlighted the importance of higher resolution cameras in improving the clarity of license plate images, leading to higher accuracy in character recognition.
d. Tech Stack used: *Python modules including OpenCV and EasyOCR.*
e. Drive Link to Certificate of Presentation: https://shorturl.at/dqAK4

POSITIONS OF RESPONSIBILITY

I. Minister of Health &Well Being in Student Council at GD Goenka Public School, Model Town (GDG)
II. Board Member- Technical Head at IEEE SSIT VIT- IEEE Society on Social Implications of Technology
III. Project Admin- 2 Projects for GSSOC'23
IV. Core Committee Member at IEEE WIE VIT- IEEE-Women In Engineering VIT
V. Core Committee Member at VITAC- VIT Anchoring Club
VI. Event Coordinator at IEEE WIE VIT event "Hooked on React" 2022

TECHNICAL SKILLS

Techniques: Python; C++; C; MySQL (Database Management System); Figma; Canva; Microsoft Office; web designing using HTML, CSS and Java Script; Redux; React.js; Node.js; Express.js; MongoDB;(MERN Stack); Firebase; Git; Github; R; React Native; React Router, AWS Machine Learning(Deep Racer); Python Libraries used in Data Visualization- Numpy, Pandas, Scikit, Matplotlib, PyTorch; SPARQL; Hugging Face Libraries; OpenCV.

CERTIFICATIONS

I. AWS-Udacity Nanodegree for AI programming in Python
II. JavaScript Basics: an online non-credit course authorized by University of California, Davis and offered through Coursera.
III. Goldman Sach's Virtual Engineering Program
IV. Advance Frontend Web Development Course by Coding Ninjas
V. Principles of Management (John Hopkins University) (Coursera)
VI. Semantic Web Technologies- OpenHPI
VII. MERN from Scratch 2023 Udemy Course by Brad Traversy
VIII. Sequence Models Coursera DeepLearning.AI course
IX. Python for Computer Vision with Open CV and Deep Learning Udemy Course by Jose Portilla
X. ChatGPT Prompt Engineering course by DeepLearning.AI

EXTRA-CURRICULAR ACTIVITIES

- 2nd prize CIL Hackathon (2021)
- 1st prize Eco Hack IEEESSIT, VIT (2021)
- AWS Deep Racer September Qualifier model rank 303/2058
- AWS-Udacity Scholarship for AI programming in Python
- Speaker Session at Code Confluence- Igniting Open Source Innovation by IEEE SSIT VIT(50+ audience)
- Grace Hopper Celebration Scholarship'23 Recipient
- 2 projects accepted to Girls Script Summer of Code'23
- Mentee at Codess.Cafe