848-437-1922 **Parth Hasmukh Jain** New Brunswick 08901
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EDUCATION

Master of Science: Computer Science (GPA 3.917/4.0) Sep 2021 - May 2023
Rutgers University | New Brunswick, New Jersey
Courses: Data Structures, Artificial Intelligence, Mathematics of Data Science, Machine Learning, Data Mining.
Graduate Teaching Assistant: for Database Technology and Computer Concepts and mentored a group of 100 students.

Bachelor of Engineering, Computer Engineering (GPA 8.37/10.0) Aug 2017 - Jun 2021
University of Mumbai | Mumbai, India
Courses: Algorithms, Object-Oriented Programming, Software Design, Database Management, Web Technologies.

PROFESSIONAL EXPERIENCE

Graduate Research Assistant | Rutgers RUCI lab - Prof Jim Samuel [Demo] May 2022 - Aug 2022
- **Digit Recognizer**: Assembled and preprocessed 300 digit images furthermore Rotated, Shifted, and Zoomed 5000 MNIST images to expand MNIST data by 10%.
- Recognized digits with an accuracy of 99.28% by building a CNN and fine-tuning model on aggregated data.
- Detected more than 12 digits in an image by employing convex hull and bounding box algorithms and deployed digit prediction system on Hugging Face utilizing Gradio.

Machine Learning Intern | WINLAB, Rutgers University Jun 2022 - Aug 20022
- **Radar Based Patient Discrimination**: Developed a radar-based system to monitor medication adherence for subjects taking pills from a bottle and identified 3 users leveraging speed, range and direction data collected from a Radar sensor.
- Fetched JSON data from radar's API, augmented data with scaling and magnitude wrapping by 50%, and converted aggregated data to multivariate time series data.
- Identified users with an accuracy of 80% by extracting features using TSFEL and using a Bagging Classifier.

Software Engineering Intern | Mahavir Industries Dec 2019 - Jan 2020
- Increased user clicks by 25%, developing a User-Friendly e-commerce website to browse products.
- Programmed a virtual chatbot to enhance site accessibility, resulting in a 33% increase in customer purchases.
- Integrated Payment gateway using PayU money API for effortless shopping experience.

Software Engineering Intern | Navlakhi May 2019 - Nov 2019
- Led design and development of full stack for JEE/NEET software with a team of 5 interns making use of PHP, MySQL HTML and CSS with an aim of conducting online tests and evaluating students' performances.
- Improved student performance by 40% by incorporating dynamic weight assessment algorithm with Python to enable students to take an adaptive test to automatically assess and adjusts difficulty level of questions.

ACADEMIC PROJECTS

Food AI using Cross Modal Representation Learning [Repo]
- Explored Cross-Modal Learning Representation on Recipe–1M dataset by developing an AI-powered food image recognition system to take an image as input and provide a recipe along with ingredients and vice versa.
- Improved retrieval metrics by 32% with a multimodal representation on CCA and DCCA with Triplet Loss.
- Incorporated Vision Transformers, BERT, and cross-modal attention when learning shared representations to solve fine-grain representation and performed ablation studies to back design choices.

Maze Runner
- Constructed a CNN and Dense neural network utilizing TensorFlow to mimic the A star path planning algorithm into an unknown grid world and achieved 95% and 90% accuracy respectively.
- Assembled data-sets of 20000 grids and analyzed data leveraging pandas and NumPy.

Automated Learning and Testing Platform [Repo]
- Created a Game-Based learning system using HTML, CSS, JavaScript, PHP, MySQL and Flask with a team of 3 to provide a complete assessment of students utilizing Anti-Cheating Tools.
- Implemented and tested 18 major features to automate drafting assessments to reduce teachers' workload by 60%, including OCR, speech-to-text recognition, tab switching detection, OTP verification, and QR code generation.
- Authored and [published] a research article on Game-Based Pedagogy system in IJESE, October 2020.

Healthcare Management System
- Built a web application leveraging HTML, CSS, JavaScript to reduce doctors' workload by 40%, allowing doctors to log in accounts, view appointments, search patients and patient's medical history, and hosted the site on Heroku.

TECHNICAL SKILLS

- Languages: Python, PHP, Java, HTML, CSS, SQL, JavaScript, C,React.
- Libraries/Frameworks: TensorFlow, Keras, Pytorch, MySQL, OpenCV, Flask, NumPy, Pandas, Gradio, NLTK,Sklearn.
- Tools: Git, Heroku, VS Code, Jupyter Notebooks, Android Studio, Hadoop.