Raunaq Jain

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EDUCATION

University at Buffalo**,** The State University of New York, Masters in Computer Science [GPA: 3.81/4] 08/2019 – 02/2021

MAIT, Guru Gobind Singh Indraprastha University, B.Tech in Computer Science [CPI: 71.98%] 08/2014 – 05/2018

TECHNICAL SKILLS

Languages/ Frameworks: Python, Java, Rust, C, Django, Flask
Databases/ Web Development: SQL, MongoDB, Postgres, HTML, CSS
Tools/Concept: Git, Docker, Android Studio, Apache Solr, AWS, Azure, Postman, JIRA, Agile
Libraries: PyTorch, OpenCV, scikit-learn, SpaCy**,** Plotly, matplotlib, NumPy, Pandas

EXPERIENCE

Research Volunteer, University at Buffalo 06/2020 – Present

- Artificial Intelligence in Ethnobotany (AIE): Developing and pioneering machine learning solutions for plant species identification in images (**50K**) with applications in Ethnobotany through Azure.
- Secure Storage for TrustZone: Designing and porting secure file storage system from **C to Rust** for Trusted Execution Environment. Performing software verification to verify removal of memory leaks and dangling pointers present in kernel.

Machine Learning Intern, Nulenta Private Limited 12/2019 – 01/2020

- Matched user profiles to job requirements and scored them for automatic candidate selection.
- Built machine learning models in PyTorch to predict scores. Implemented application in Django (REST API).

Machine Learning Research Intern, Hypothizer Technologies Private Limited 07/2018 – 02/2019

- Captured intelligence-ready data from documents to develop a cloud-native document parsing platform.
- Architected, developed, and deployed Resume Parser with average F1 score of **0.93** after training on 150 samples in PyTorch.
- Improved accuracy by **10%** on existing document parser through feature engineering and customized models.

Research and Development Intern, All India Council for Technical Education 10/2017 – 03/2018

- Created a full-stack web-app in Django, in team of 6, that utilized machine learning to predict the employment potential of universities and set standards for **10k+** technical colleges throughout India, sanctioned by the Government of India [Github].
- Developed data pipeline and trained machine learning models through scikit-learn. Curated, analyzed, and visualized **5 years of data** in Python and produced interactive plots through Plotly for the user interface.
- Awarded **1st prize** ($3000) in Smart India Hackathon'17, Government of India, against **7400+ teams** for the prototype.

PROJECTS

Forums 06/2020 – 07/2020

- Created a forum type web application with user authentication in Django (REST API).
- Established Postgres database, Gunicorn server, and Nginx server to handle incoming requests and serve static content.

FEVER: Fact extraction and Claim verification 02/2020 – 05/2020

- Orchestrated and engineered an application in Flask to extract evidences from **145K** Wikipedia articles and verify credibility of an input claim sentence. Devised a component in PyTorch to extract contextual similarity between two sentences.
- Indexed 145K Wikipedia articles on Apache Solr and improved document retrieval system. Deployed application using Flask.
- Delivered a FEVER score of **41%** against the baseline of **27%**.

Simple Amazon Dynamo 02/2020 – 05/2020

- Developed a distributed multicast messaging system with fault tolerance and recovery of nodes providing linearizability and availability using sockets in Java Android.
- Programmed a distributed key-value storage using Quorum technique for communication between multiple nodes.

Reinforcement Learning 02/2020 – 05/2020

- Explored training AWS DeepRacer locally, documented procedure, and presented findings.
- Trained an agent to play Atari Breakout using OpenAI Gym and achieve state-of-the-art results.
- Compared and evaluated different policy-gradient methods on OpenAI Gym Cartpole environment.

DogDogGo, Search Engine Application [Demo] 11/2019 – 12/2019

- Implemented an end-to-end tweet search engine with content ingestion, topic categorization, and analytics. Indexed **200K multi-lingual** tweets in Apache Solr. Hosted the application on Amazon Web Services (AWS) EC2 instance.
- Assessed impact of political rhetoric in traditional and social media and presented multiple interactive geospatial plots.
- Developed application backend in Django (REST API) to implement features: tf-idf ranking, pseudo relevance feedback, more-like-this, filter-based search, query translation, and search highlighting.