Naila Fatima

US Citizen | nfatima5596@gmail.com | Portfolio | GitHub

Experience

Software Engineer April 2022 – Present
Andromeda 360 (spinoff of Hypergiant)

- After legal issues were resolved by Andromeda 360 spinning off Hypergiant, I was rehired.
- Maintained the model development kit (MDK), wrote unit and regression tests, updated the documentation
- Implemented model versioning to enable users to create multiple models with the same name and different version
- Incorporated retraining functionality into the MDK by saving the trained model artifacts in their native format so they could be retrieved, retrained and saved as a different version of the same model.

Software Engineer Aug 2021 – Jan 2022
Hypergiant

- Built datasources with SQLAlchemy to establish connection with SQL (MySQL, PostgreSQL, SQLite) and Snowflake databases and execute queries.
- Implemented hyperparameter tuning for Hyperdrive experiments using Optuna; if the user specified the model type and the hyperparameters to be tuned, a trained model with optimal hyperparameters is returned.
- Updated the Ariadne resolvers used by the local machine to handle AWSv2 credentials.
- Created a scheduler using Papermill to execute Jupyter notebooks at specified times. The scheduler could add, delete and edit the scheduled jobs.

Computer Vision Researcher May 2017 – May 2019
IIIT Hyderabad

- Created video blur detection models with Python and OpenCV which used variations in video frame intensities and a neural network to achieve 90.13% accuracy; project done in collaboration with Qualcomm
- Co-led the development of a film shot classification technique which utilized pose estimation (via OpenPose) and a rule-based approach in Python; could distinguish between close-ups, medium shots and long shots with 77.5% accuracy
- Implemented video stabilization techniques using L1 optimal camera paths and content preserving warps in MATLAB; minimized effect of camera motion on video

Skills

Languages: Python, C, C++, MATLAB, SQL, HTML, CSS, Bash, Java
Libraries: OpenCV, TensorFlow, PyTorch, Keras, scikit-learn, NumPy, OpenPose, Optuna, SQLAlchemy, VLFeat
Technologies & Tools: Flask, Git, Docker, MySQL, Unix/Linux

Projects

Book Management System (Python, MySQL, Flask, HTML) Link

- Devised an application which recommended books to users based on their past readings in the form of HTML web pages using Flask-MySQL; recommendations were based on genres and authors of books frequently read by the user
- Implemented a login functionality which allowed users to keep track of books read and the ratings they allotted to them

Automatic Essay Scoring (AES) with Bias Prediction (Python, PyTorch, scikit-learn) Link

- Developed an AES system using machine learning models (Bayes classifier, LSTMs, BiLSTMs) with a 97% agreement among scorers on the ASAP-AES dataset
- Processed data for feature extraction and trained models to predict the age and gender of the essay author to analyze the possibility of bias in essay scoring; indicated a possible gender bias in AES

Video Google (MATLAB, VLFeat) Link

- Implemented object and scene retrieval to find all occurrences of a user-outlined object in a video
- Incorporated SIFT features and TF-IDF ranking to ensure robustness; performed with a rank of 0.218 indicating that images were generally retrieved in order of relevancy

Education

Georgia Institute of Technology, Atlanta, GA Aug 2019 – Dec 2020
MS in Computer Science, Specialization: Machine Learning GPA: 3.9/4.0
Coursework: Artificial Intelligence, Computer Vision, Machine Learning, Natural Language, Deep Learning, Game AI

International Institute of Information Technology (IIIT) Hyderabad, India Aug 2015 – May 2019
B. Tech in Electronics and Communications Engineering, Honors in Computer Vision, Dean's List GPA: 8.65/10.0
Coursework: Algorithms & OS, Data Structures, Linear Algebra, Digital Image Processing, Statistical Methods of AI