Syed Rizvi

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EDUCATION

College of Natural Science and Mathematics, University of Houston, TX
Bachelor of Science in Computer Science **May 2023**
Cumulative GPA: 3.97, Major GPA: 3.9

EXPERIENCE

HULA Research Laboratory, Houston, TX **September 2020 - Present**
Machine Learning Research Assistant

- Contributed to deep learning research projects covering medical imaging, transformer networks, and data augmentation algorithms under the mentorship of Dr. Hien Van Nguyen
- Coauthored research paper proposing MorphSet, an attention-based CNN architecture for case-level assessment in renal histopathology (paper accepted at MICCAI)
- Currently leading research project exploring transformer-based Generative Adversarial Network architectures for application on medical image data
- Delivered oral abstract (15 mins) on MorphSet architecture and significance to 90+ medical professionals and AI researchers at the 2021 AI in Nephropathology Workshop in Amsterdam
- Developed and integrated two custom Labelbox annotation interfaces for use by nephropathologist collaborators covering 12 different renal disease indicators (805 images fully annotated on system)
- Wrote Python scripts for image tile extraction from kidney biopsy whole slide images, assisting in the development of a 2,442 image dataset

Phillips 66, Houston, TX **May 2021 – August 2021**
IT Intern (Natural Language Processing)

- Operated in an Agile Kanban team environment to develop tools for document cognition
- Wrote Python scripts for extracting and cleaning text from 254 contract documents, resulting in a dataset of 2,717 text segments
- Trained and deployed domain-specific entity recognition models on AzureML cloud services, identifying 6 contract entities within unstructured text and reaching 87% overall model precision
- Developed a blob storage-triggered Azure Function App to consume deployed model endpoints in order to process and score entire contract documents within 12 seconds
- Conducted text classification experiments for document categorization based on contract clauses
- Delivered NLP project presentation to IT leadership members and Data Science team at Phillips 66

Taipei Medical University, Taipei, Taiwan **March 2021**
Data Analyst Intern (Remote Work)

- Processed and merged wearable device data measurements taken from 18 Taiwanese patients using Python data management libraries
- Performed correlation analysis and visualizations between physical activity, circulation, fatigue, and sleep measurements taken over 9 months

PUBLICATIONS

- Cicalese, P.A., **Rizvi, S.A.**, Wang, V., Patibandla, S., Yuan, P., Zare, S., Moos, K., Batal, I., Clahsen-van Groningen, M., Roufosse, C. and Becker, J. (2021). *MorphSet: Improving Renal Histopathology Case Assessment Through Learned Prognostic Vectors*. International Conference on Medical Image Computing and Computer-Assisted Intervention (pp. 319-328). Springer, Cham.

PRESENTATIONS

- MorphSet Research Project Abstract, AI in Nephropathology Workshop in Amsterdam
- Custom Image Annotation Schemes using LabelBox, University of Buffalo, NY Computer Vision Group
- Natural Language Processing and Entity Recognition Models, Phillips 66
- IT Candidate Profile Development, MISSO professional development workshop

INDEPENDENT PROJECTS

AWS Lex Bot Generator **January 2021**

- Chatbot generation pipeline aimed at automating the AWS Lex chatbot creation process
- Lead presentation and demo preparation efforts within a team of 4 students, resulting in a 1st place finish among 20+ teams at the 2021 HP & AWS Bot-a-thon competition
- Wrote configuration files outlining chatbot dialogue flow according to the competition specifications for customer service interaction
- Developed using AWS Lex, Lambda, S3, DynamoDB, and React

Autoencoder Anomaly Detection **August 2020**

- Trained an unsupervised autoencoder machine learning model on environmental sensor data taken from Amazon's Seattle Sphere conservatories
- Wrote evaluation functions to flag anomalies based on mean absolute error of data reconstruction
- Placed 3rd in the AWS & NVIDIA Environmental Hackathon ($3000 award)
- Developed using AWS Sagemaker, Python, Pytorch, and Jupyter Notebooks

NutrientView Mobile App **July 2020**

- Nutrient tracking mobile app utilizing image recognition to log consumed meals
- Created displays for daily nutrient intake meters covering 25 major macro and micronutrients
- Integrated an Azure Q&A chatbot with nutritional information to provide real-time feedback
- Developed using React Native, IBM Watson, Azure bot service, and the Edamam Nutrition API

TECHNICAL STRENGTHS

Libraries:	Pytorch, Tensorflow, Keras, Pandas, Scikit-learn, Jupyter Notebooks
Programming Languages:	Python, SQL, C++, R, MATLAB, JavaScript, Java
Cloud Services:	Azure ML, Azure DevOps, AWS Sagemaker, IBM Watson Studio

CERTIFICATIONS

IBM Data Science Specialization **August 2021**

IBM, Coursera Online Specialization

- Data Analysis, Processing, Visualization, and ML model development using Python libraries

Machine Learning **February 2021**

Stanford University, Coursera Online Course

- Supervised and Unsupervised Learning Algorithms
- K-Means clustering, PCA, machine learning pipelines

HONORS AND AWARDS

Dean's Distinguished Scholars List, University of Houston, TX **Fall 2019 – Spring 2021**

ACTIVITIES

Management Information Systems Student Organization **January 2020 – Present**

Professional Development Committee Member *August 2020 – May 2021*

- Worked with teams of 20+ committee members to perform 60+ resume reviews per semester following resume guidelines set by the C.T. Bauer College of Business