

Rachel Roig



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Education

B.S. Computer Science | Florida International University | 05/2020-05/2022

- GPA: 3.8, CUM LAUDE
- AI researcher in FIU DISCOVER (doing research in video and audio analysis for detecting Deepfakes).

Projects

Art classification – Building a CNN model to work with a dataset of art genres to train the model to study the paint strokes and color of pattern to guess a portrait's genre and artist.

Deepfake Audio detection – Using Fourier analysis in training set to detect overlapping sounds and remove it to create a smoother audio sample for better classification results. Used librosa library to collect and calculate MFCCs, bandwidth, chromogram, and STFT features from the audio files, and trained those features after normalization into Convolutional neural network model, Accuracy result turned to be 80%.

Saving Everglades extinct species – Installed cameras capture activities in the Everglades, my role on the project was to use low light images captured at nighttime and short expose the raw images and apply multiplicative gain to correct the exposure time for the dark inputs and use the attributes to train and test in deep learning GANs model in two latent spaces concurrently to restore the images in real-time.

Experience

Software Engineer | J.P. Morgan | 07/2022-Present

. Worked on developing applications front end components with React JS, and testing UI scripts with Jest Unit Test. Develop functions in Lambda that aggregates the data from incoming events and stores the received data in AWS DynamoDB and S3. Used Terraform templates to build staging, production environments, and automation for Jenkins. Conduct Regression and Integration testing such as mock data objects, API endpoints and encrypted KMS keys. Develop and maintain test scripts using Python and Boto3 to automate AWS resource testing and validation. Code SQS queues to trigger step functions for ETL and winback notifications. Help incorporate SMB monitoring for Splunk dashboard and develop lambda function for selected log groups from CloudWatch to be sent to designated Splunk HEC endpoint. Code scripts that will scan transaction logs every x number of days for data retention and accuracy.

Machine Learning Engineer Intern | WELLS FARGO | 06/2021-08/2021

. Created a self-healing environment app using machine learning and full stack development tools. Exported data from Splunk log and AppDynamics health metrics into a database using ELK pipeline and REST API. Constructed an AI model using supervised methods and NLP to train dependencies between stack traces in Splunk to their corresponding error outputs to predict and classify undefined errors with minimum downtime and an accuracy score of 92%. Other algorithms used throughout the process was bayes naive approach, clustering log parsing, PCA and text sentimental analysis.

Data Science Analyst Intern | NOKIA | 09/2020-12/2020

. Conduct metadata testing on datasets prior to distributing to the NSW team. Conduct gateway testing and unit test cases for the python program as well before distributing to the company's use and deploying it to the Azure cloud. Code up Python scripts with Azure API for an automation process that would extract the latest files within the site directory to a designated PowerBI dataset on a biweekly basis. Analyze performance metrics in Nokia global training site and make monthly predictions on employee's performances for stakeholders through the use a classification using stacked ensemble model and optimizer.

Software Engineer Intern | NASA | 05/2020-08/2020

. Created a computer vision application to analyze electrostatic surface properties and minerals components from NASA's database of lunar regolith to decipher which type of soil components would be required for the metal conversion process that would be used for filament production. Methods used were support vector machine, logistic regression model as well as linear and nonlinear methods.
. Work on native backend components and frameworks (Primarily C/C++ and COM) for the spectrograph ultraviolet camera, including embedded controller and test firmware functionality.

Back End Engineer | ENTERTAINMENT BENEFITS GROUP | 11/2018-06/2020

. Follow-up with JIRA backlog system, document user's interaction and track files of client's orders in the database to verify any issues, check for timestamps of when the tickets/products were effectively sent from sellers to clients with no issues.
. Develop REST APIs with Node JS, and work with MongoDB for hotel listings and with MYSQL for the customers' orders.
. Create and modify device drivers to interface with management controller under Linux
. Use J2EE/Java with Spring and Hibernate to debug error messages, and bugs and used them to executes established test plans and protocols for assigned portions of code.

Skills

Applications/Programming – Full Stack, Machine Learning, Keras, Tensorflow, multi-threading, synchronization, IPC/RPC, Java Spring, Flow, C, C++, MongoDB, MYSQL Python, and Java. AWS cloud infrastructure and services: EC2, S3, Lambda, CloudFormation, CloudWatch, SQS, SNS, DynamoDB.

Coursework – Operating Systems, Data Structures, Software Engineering, Computer Architecture, Systems Programming, Database Administration, Numerical Analysis, Modeling and Simulation.