Prakrut Patel

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Education

Eckerd College

Bachelor's of Science (B.S.), Computer Science & Physics   May 2022

GPA 3.71

- Dean's List: 2018, 2019, 2020, 2021
- Harry W. Ellis Award for Outstanding Achievement
- Graduated with Honors
- Machine Learning Project: Instance Segmentation with Mask RCNN using Tensorflow
- Capstone Project: Cross Platform Mobile Application
- Relevant Courses: Machine Learning, Data Structures, Calculus III, Linear Algebra, Differential Equations

Research Experience

Dr. Michael Hilton - Eckerd College   St, Petersburg, FL

Student Researcher - Machine Learning   May 2021 - May 2022

- Built Context & Faster RCNN models on a custom dataset using TensorFlow Object Detection Library, resulting in much higher detection accuracy and reduced human inputs needed for segmentation.
- Created and transformed datasets for ML applications, ensuring that they were clean, consistent, and in the correct format for training and inference.
- Explored the hyperparameter space to find the best combination of parameters for each model
- Designed a machine learning pipeline to train both models, perform evaluation and compare inference results
- Developed and deployed models using Docker containers in a Linux environment

Dr. Stephen Weppner - Eckerd College   St, Petersburg, FL

Lead Student Researcher - Computational Nuclear Physics   June 2020 - May 2021

- Reduced computational time by 30x for all sample by using Python and Bash to automate our process
- Resolved data compatibility issues between Python and Fortran programs during the pipeline process
- Performed exploratory data analysis of the output for variable tuning using reduced chi-square evaluation between input and output
- Created input parameter files for the programs by using data from Brookhaven National Laboratory
- Performed statistical analysis of the output to check for correlation with known data using NumPy, SciPy & Pandas
- Implemented multi-threading in a Linux environment to run concurrent pipeline processes which reduced total time required by 60%
- **Paper submitted to American Physical Society - Physical Review Journals**

Work Experience

Axiom Group   Tampa, FL
Software Engineer   September 2022 - Present
- Developed solutions in Python and SQL to support backend components as well as improved functionality of existing systems
- Planned, developed and maintained REST and SOAP API bridges between different databases and application systems
- Identified opportunities and developed applications to automate daily business tasks, data processing tasks and monitoring
- Create multiple programs using Python and SQL to satisfy business reporting needs, improving productivity by 80%
- Trained and developed machine learning models on structured data to cluster, classify and predict key features in consumer data
- Compiled consumer related data for business analysis by performing web scraping in Python
- Leveraged the scalability and performance of Apache Spark to perform data operations on large datasets

EC MakerSpace (Summer Position)   St, Petersburg, FL
Web Developer   June 2022 - August 2022
- Developed a responsive user facing web application for creating modular line drawings for CNC machines and laser cutters using ReactJS, React Hooks, React-Router and Javascript
- Built custom components using React UI tools as well as Google Firebase for backend support
- Implemented MakerJS and React Blueprint for visualization of parametric CNC drawing along with an interface for customization of SVG elements

TREC LLC   Miami, FL
Intern - Mobile App Developer   January 2021 - May 2021
- Served as a Tech Lead incharge of feature development for the app
- Led a team of 4 for backend development to store app and client data based on our requirements
- Taught usage of Dart and Flutter to other interns for cross platform development
- Used Google Firebase for realtime database management, authentication and network storage

Technical Skills

Programming: Python, Java, C++, Dart, SQL, Unix Scripting
Frameworks/Libraries: Pandas/Numpy/Scipy, Scikit-Learn, Tensorflow/Keras, ReactJS
Misc: Apache Spark, Jenkins, AWS/Google Cloud, Docker, IoT Development

Activities

Director of Tech and Coding – MakerSpace (Student's Engineering Organization)	**2021 – 2022**
Math, Physics, Computer Science Tutor – Eckerd College Natural Science Department	**2020 – 2022**
STEM Tutor – tutored diverse under-represented students with 3D-modeling (CAD) projects	**2018 – 2019**
Student Athlete – Tennis Team Co-Captain	**2018 – 2022**