Darasy Reth

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Summary

Computer systems engineering- IoT graduate student with an understanding of software development, algorithms, artificial intelligence, and machine learning. Experienced and skilled at working in a team, hard-working, flexible and highly responsible. Experienced and proficient in programming languages such as C, Java, and Python.

Technical skills

Programming languages:	Java, C, C++, Python, R, Verilog
Operating systems:	Linux, Macintosh, Windows 7/8/10
Database:	MySQL, Spark, Hadoop, Hive
Cloud platform:	AWS

Education

Northeastern University, Boston, MA

Master of Science in Computer Systems Engineering - Internet of Things   Expected December 2020

Relevant courses: Data Science Engineering Method and Tools, Concepts of Object-Oriented Design

State University of New York at Buffalo, Buffalo, NY

Bachelor of Science in Computer Science   December 2018

Bachelor of Arts in Mathematics

Relevant courses: Machine Learning, Artificial Intelligence, Algorithm Design and Analysis, Software Engineering, Data Structure, Operating Systems, Compilers, Linear Algebra, Applied Probability and Statistics Inference

- Dean's List.
- Tau Sigma National Honor Society.

Experience

Embedded Sensing and Computing Lab, Buffalo, NY   August 2018 – January 2019

Undergraduate Research Assistant

- Accomplished the foot analysis project with the acceptance to 2019 IEEE-EMBS 16th International Conference on Wearable and Implantable Body Sensor Networks.
- Utilized computer vision technology in Python to analyze human foot parameters including foot length, foot width, foot circumference, heel circumference, toe height, and foot back height.
- Designed algorithms to determine the foot shape of a person using Euclidean distance, circle, and ellipse circumference with at least 90% of the overall correct foot parameters' estimation.
- Visualized and evaluated human foots' computed data, and optimized the algorithms to reduce error rates.
- Built a tool to extract skeleton key points from video surveillance using deep learning and IoT technology.
- Designed a deep learning model in Python to identify and to distinguish fall motion from other human activities with 95% of the positive fall detection rate.
- Evaluated and optimized the model to significantly increase the efficiency of fall detection to compute in real-time by reducing the system's complexity.
- Presented the Fall Detection project and the significance of human skeleton extraction method to the public during the Computer Science Education Week at the University at Buffalo.

Experiential Learning Project, Curbell Medical, Buffalo, NY   August 2018 – December 2018

Software Developer and Researcher

- Designed machine learning models including K-Nearest Neighbors, Random Forest, and Convolutional Neural Networks to analyze unusual human's activities in real-time using Tensorflow and Scikit-Learn.
- Analyzed human motions' data, visualized and interpreted statistical data collected from the models and OPPORTUNITY dataset, and recommended an efficient system to Curbell Medical team.
- Led the software team in researching and developing the models to follow the project timeline.
- Collected patient's movements dataset using Arduino to feed to the models.