Aushim Nagarkatti

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EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
Master of Science in Electrical and Computer Engineering - Applied Advanced Study, QPA:4.0/4.0 *May 2022*
Relevant Courses: Fundamentals of Computer Systems (18-613), Introduction to Machine Learning for Engineers (18-661), Algorithms for Large Scale Distributed Machine Learning and Optimization - current (18-667), Intro to Computer Architecture - current (18-447)

PES University **Bangalore, India**
Bachelor of Technology in Electronics and Communication Engineering, CGPA:8.58/10 *May 2020*
Relevant Courses: Pattern Classification, Neural Networks, Speech Processing, Digital Image Processing, Embedded Systems, Microcontrollers, Parallel and Distributed Computing

SKILLS

Programming Languages: Python, C, Assembly (x86-64), VHDL, C++, SQL
Software: PyTorch, Keras, scikit-learn, Matlab, ROS, Multithreading, Parallel Processing, Networking, Synchronization, Linux Scripting, Git, Jenkins, Docker, Azure, OpenSim, Polhemus (Motion Tracking)

PROJECTS

Digit Recognition, 18-661 CMU
- Classified handwritten images of digits using a Neural Network coded from scratch, using numpy. Achieved a validation accuracy of 93%

Spotify Song Recommender, 18-661 CMU
- Created a Decision Tree using sklearn to personalize song recommendations, based on 16 features from the music track. Output consisted of a 'love' or 'hate' label, with a training accuracy of 73.17%

Splice junction detection, 18-661 CMU
- Trained an SVM model on UCI's Splice dataset, to recognize splice junctions. Obtained a resultant test accuracy of 85.37% using 5-Fold Cross Validation

e-Yantra: Robotics Competition, IIT Bombay
- Programmed a drone to autonomously navigate and land on a moving marker, utilizing an overhead camera
- Processed image feed from camera to extract the drone's position and designed a PID for it to navigate Attained a spot on the Top Ten Leaderboard out of a few hundred teams in India

RESEARCH EXPERIENCE

Autonomous Systems - Safety Mechanisms in Self Driving, CMU *Jan 2021-Present*
- Studying traction performance and mobility of a self-driving car in an icy setting

Research Assistant- Center for Neuroscience, Indian Institute of Science *Oct 2018-Jan 2020*
- Recorded hand movements from motion tracking sensors. Ran simulations on data to find corresponding Neural Activations and validated results through Forward Dynamics
- Constructed a Recurrent Neural Network to approximate Velocity Profiles of reaching movements

Research Intern, Microsoft Innovation Lab *May-Oct 2018*
- Cleaned and processed EEG data for a Motor Imagery-based Brain Computer Interface. Tested and developed a Machine Learning model to classify trials into four categories - Left Hand, Right Hand, Feet, Tongue
- Achieved accuracy of above 75%. Publication: "*Extreme Gradient Boosting Classification of Motor Imagery using Common Spatial Patterns", IEEE (INDICON), December 2020*

Hitachi Pentaho Summer Internship *Oct 2017-May 2018*
- *Analyzed data from PPG sensors to non-invasively estimate Lipid Levels in blood. Plotted inferences and demonstrated a positive correlation between Pulse Wave Velocity and Lipid Deposition levels. Presented a report to the Hitachi-Pentaho team on the practicality of the Pentaho software for Data Analytics*

EXPERIENCE

Optum, UnitedHealth Group ***Bangalore, India***
Associate Software Engineer II *Aug-Dec 2020*
- Set up and maintained Azure Cloud Infrastructure for the Medicare & Medicaid Portals (USA)
- Migrated an on-premise Oracle database to Azure SQL Managed Instance on Cloud. Created Database Schemas and implemented Stored Procedures for the Managed Instance, reducing on-premise maintenance overheads

Nokia ***Bangalore, India***
Software Engineering Intern- Analytics and Workflow *Jan-June 2020*
- Created an application to visualize Data Analytics Pipelines from json schemas
- Developed and enhanced features for a GUI Data Analytics Platform, containerized and deployed it for end-user Data Science applications

AWARDS

- Opal Performance Award, Optum : Stored Procedure Migration to SQL Server *December 2020*
- Diamond Relationships Award, Optum : Team Building and Positive Work Culture *November 2020*
- Aquamarine Performance Award, Optum : Proactive migration of Database Objects & Evaluation *December 2020*