Sumedh Godbole

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Education

Arizona State University
Tempe, AZ, U.S.A

Master of Science in Computer Science {GPA : 3.83 / 4.0} *August 2019 - May 2021*

- Specialization : Artificial Intelligence (AI)

Relevant Courses

- Applied Cryptography (C++), Fundamentals of Algorithms, Data Structures, Perception In Robotics, Topics in NLP, Data Visualization

Sant Gadge Baba Amravati University
Amravati, Maharashtra, India

B.E. in Computer Science and Engineering {GPA : 9.11 / 10.0} *March 2013 - September 2017*

- Ranked *7th* on the university merit list for Computer Science (2017)

Work Experience

Active Perception Group, ASU
Tempe, AZ

Graduate Services Assistant *May 2020 - August 2020*

- Researched topics in areas such as Robotics, SLAM, 3D Mapping, Computer Vision and Reinforcement Learning Applications and the AV Technology Stack at ASU APG
- Developed a new formulation for Pursuit-Evasion games that lead to the building of a LiDAR-enabled robust and pragmatic pursuit agent
- Improved the capture time of conventional camera-based pursuers by more than 25% using prediction-based pursuit models
- Submitted a research paper to the International Conference on Robotics and Automation (ICRA)

Arizona State University
Tempe, AZ

Graduate Teaching Assistant *August 2019 - December 2020*

- Instructed undergraduate students for the course CSE 110 - Principles of Programming (Java)
- Conducted recitations which consisted of live coding sessions, held Office Hours and graded examinations for class of 100+ students

Sahir Projects
Pune, India

Machine Learning Engineer (Software Engineering) *July 2018 - July 2019*

- Engineered a Machine Learning proof-of-concept exercise resulting in the eventual adoption of a Machine Learning framework by the company
- Synthesized 100k training samples for the exercise by making use of random normal distributions, labeled using a complex rule based system
- Designed a machine-learning pipeline to predict the probability of winning a bid using a Random Forest classifier for exhibiting low bias, resulting in 3x more monthly bids placed
- Pioneered a 9% increase in the number of bids won compared to the last financial quarter

Projects

Online Prediction for Vision-based Active Pursuit using Domain Agnostic Offline Motion Model
IEEE ICRA'21

Python, Tensorflow, PyTorch, OpenCV

- Produced more accurate estimations of an evader's future location (upto 0.019 meters) compared to a Particle Filter-based approach by proposing the use of an encoder-decoder LSTM as a predictive model
- Facilitated a 26% faster capture of the evader as demonstrated by the evaluation of this approach via setting up pursuer and evader vehicles in a MORSE environment
- Generated empirical proof showing the proposed method to be domain agnostic i.e, without the explicit need to retrain the prediction module by evaluation in a CARLA environment (low mean prediction RMSE over 100 runs)

The Scope of Human Computer Interaction

Java (Backend), XML (Front-End), OpenCV, Android Studio (IDE)

- Elevated the UME rating for conventionally used Navigation Interfaces from 3.5 to 4.7/5.0 by designing an AR-enabled Android application that obtains information about any location viewed from the device camera
- Supervised the process of constructing the interface featuring an Augmented-Reality overlay containing information about the target location on the screen of the host device
- Reduced on-device execution times by over 10% by implementing a pipeline for processing raw sensor data and rendering the overlay by leveraging the Android Studio IDE
- Led a 4-member team to the first place in National Paper Presentation Threshold'17

Technical Proficiency

Languages

- Python, Java, C++, C#, HTML5 / CSS3, JavaScript, SQL

Frameworks / IDEs / Libraries/ Software

- MORSE, CARLA, Gazebo, ROS, OpenCV, Tensorflow, Torch, Theano, Keras, Numpy, Seaborn, Matplotlib, Pandas, Scikit-Learn, Google Firebase, Google Cloud, Android Studio, AWS, Rest API, Git Version Control , Linux (Debian Packages), Docker

Certificates

- Computer Vision : OpenCV, SSD and GANs, Machine Learning, Deep Learning, Android Development, AWS Fundamentals Specialization

Honors & Awards

2021 **The Master's Opportunity for Research in Engineering (MORE)**, Ira A. Fulton Schools of Engineering *ASU*

2020 **Engineering Graduate Fellowship (Fall, Spring)**, Ira A. Fulton Schools of Engineering *ASU*

2019 **Engineering Graduate Fellowship (Fall)**, Ira A. Fulton Schools of Engineering *ASU*