Parth Khopkar

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Education

Master of Science in Computer Science Fall 2019 - Spring 2021
Arizona State University; Current GPA: 4.0/4.0 *Tempe, Arizona*

Relevant Coursework: Intro to AI, Mobile Computing, Foundations of Algorithms, Robot Learning, Data Visualization

Bachelor of Engineering in Computer Science Fall 2015 - Spring 2019
Medi-Caps Institute of Technology and Management (RGPV): GPA: 8.3/10 *Indore, India*

Skills

- **Languages**: Python, C++, Java, MATLAB, HTML, SQL, JavaScript, R, Rust
- **Tools and Frameworks**: Tensorflow, Keras, ROS, Tkinter, Pandas, Bootstrap, Git, Android, D3.js

Experience

REACT LAB Arizona State University
Research Volunteer *Fall 2019 - Ongoing*

- Working on Multi-Agent Reinforcement Learning research problems with application to sequential pipeline repair and search and rescue problems.
- Responsibilities include contributing code for simulations required for research projects and creating videos explaining research.

Arizona State University Tempe, Arizona
Teaching Assistant *Fall 2019*

- Teaching Assistant for CSE 110: Principles of Programming Languages with Java.
- Responsible for delivering hands on programming lab sessions, creating presentation material and holding weekly office hours to provide tutoring to students.

Projects

- **Online Service for Detection of Sign Language in Videos**: An online **RESTful API** service hosted on **AWS** which uses a deep **CNN model** to classify videos showing hand signs from the American Sign Language(ASL). (Fall 2019)
  - Used **PoseNet** to extract human pose skeletal key points from 360 videos showing demonstrations of 6 ASL signs corresponding to everyday objects.
  - Used a deep CNN model classifier built using **Keras** API which used the key points from video frames to output hand sign categories, achieving 72.97 % accuracy on data obtained from disparate sources.
- **Helmet Detection for two-wheeler riders**: A machine learning system which analyzes traffic camera videos to detect two-wheeler riders not wearing helmets and generates traffic tickets by reading vehicle license plates. (Fall 2017)
  - Ideated at IIM Indore Social Hackathon 2017, India, where our team won 2^{nd} prize nationally out of 50 teams for innovative ideas on efficient traffic management and helmet defaulter detection.
  - Created an ML pipeline utilizing **Tensorflow Object Detection API** which identified two wheelers in images and then checked if the rider was wearing a helmet or not in order to generate traffic tickets.
- **Multi-Robot SLAM in Dynamic Environments**: Research on techniques for performing Simultaneous Localization and Mapping in dynamic environments in a multi-robot setting using **occupancy grid mapping** methods on top of **FastSLAM** algorithm. (Fall 2019)
- **Simulation of EKF and FastSLAM**: Implemented a simulation of **Extended Kalman Filter SLAM** and **Fast SLAM** methods for Simultaneous Localization and Mapping in robotics in Python and used Python's **Tkinter** module for visualization. (Spring 2018)
  - Won best poster award for the project at Medi-Caps Institute of Technology and Management's annual Computer Science project poster presentation competition.
- **SafeWalk**: Developed an Android application that suggests safe paths for walking around Arizona State University campus on the basis of proximity of other users to the travel route using **Google's Directions API**. (Fall 2019)

Positions of Responsibility

AIESEC in Indore Indore, India
Product Head *January 2016 - December 2016*

- Responsible for handling international youth organisation AIESEC's Global Talent Program in central India, achieving 40% growth in exchanges compared to previous year.
- Managed internal international partnerships and provided strategic support to enhance customer experience.
- Responsible for organizing and delivering sessions at two youth leadership conferences MLC '19 and ALC '19.