Parth Khopkar

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Education

Master of Science in Computer Science May 2021
Arizona State University | GPA: 4.0/4.0 *Tempe, Arizona*

Thesis: Control and Coordination of Multi-Drone Systems Using Graph Neural Networks
Coursework: Intro to AI, Mobile Computing, Foundations of Algorithms, Robot Learning, Data Visualization

Bachelor of Engineering in Computer Science June 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, PyTorch, Docker, MongoDB, ROS, Bootstrap, Git, Android, D3.js, Flask, Django, Agile development

Experience

Micron Technology, Inc. July 2021 - Present
Machine Learning Software Engineer *Seattle, Washington*

- Working on Micron's Deep Learning Accelerator (DLA) SDK. Responsibilities include adding new features to SDK and testing compatibility of latest neural network architectures on DLA.
- Working on research involving use of Reinforcement Learning to schedule instructions for proprietary Coarse Grained Reconfigurable Array (CGRA) architecture.

Interactive Robotics Lab at ASU August 2020 - June 2021
Research Assistant | Advisor: Dr. Heni Ben Amor *Tempe, Arizona*

- Researched Graph Neural Network(GNN) based methods for control and coordination of multi-agent systems through Imitation and Reinforcement Learning.
- Worked on zero-shot transfer of Imitation Learning trained GNN controller based on the Boids model to a PyBullet based multi-quadrotor simulator.
- Awarded funding for research on multi-agent systems by ASU's Master's Opportunity for Research in Engineering (MORE) program.

Sensagrate June 2020 - August 2020
Computer Vision Intern *Scottsdale, Arizona*

- Developed real-time object detection applications using computer vision models (MobileNet SSD and YOLO) for smart transportation which provided 90% accuracy.
- Optimized developed applications for edge devices (Jetson Nano and TX2), achieving real-time speed of 30 FPS on camera streams.
- Contributed to cloud infrastructure set up which used Microsoft Azure for machine learning development workflows.

Projects

Intelligent Interactive Visualization Spring 2020
Arizona State University

- Created an interactive visualization for flowering plants from SEINet . Mined text and images for 5800 plants, categorized them according to flower color using k-means algorithm and then performed visualization using D3.js and Leaflet.

Online Service for Detection of Sign Language in Videos Fall 2019
Arizona State University

- Created an online RESTful API service hosted on AWS EC2 that used ML to classify videos showing hand signs from the American Sign Language(ASL) to enable people with speech impairments to communicate with smart assistants. Used TensorFlow's PoseNet model to extract skeletal key points, achieving 72.97 % accuracy.

Achievements

- Conference paper: Parth Khopkar, 2020, "Mixed-Initiative Flexible Autonomy in Drone Swarms for COVID-19 Applications", IEEE International Symposium on Technology and Society, 12-15th November, Tempe: Arizona.
- Awarded 2^{nd} prize nationally out of 50 teams at IIM Indore Social Hackathon 2017 for innovative ideas on efficient traffic management and helmet defaulter detection.