Aseem Saxena

Corvallis, Oregon, USA
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Education

PhD in Artificial Intelligence Mar '21 - Current
Oregon State University
Corvallis, Oregon, United States of America
Current GPA: 3.86/4.0

B.E(Hons) in Electrical and Electronics Engineering Aug '11–May '16
Birla Institute of Technology and Science Pilani
Pilani, India
CGPA: 7.34/10.00

M.Sc(Hons) in Biological Sciences Aug '11–May '16
Birla Institute of Technology and Science Pilani
Pilani, India
CGPA: 7.34/10.00

Experience

Graduate Research Assistant
Oregon State University Jun '21–Present
Prof Alan Fern

- Offline Policy Evaluation in Multi-Dynamic Settings.
- Multi-Task Learning for Grape Cold-Hardiness Prediction. Published research at AAAI 2023.
- Sim-to-real Learning of Footstep Constrained Bipedal Locomotion. Published research at ICRA 2022.
- Side Effect Minimization in Reinforcement Learning. Published research at Neurips ML Safety Workshop 2022.
- Combining Perception and Control for Bipedal Locomotion.
- Teaching Assistant - ME 430 Systems Dynamics and Control

AI Engineer
Panasonic, Singapore Jan '19–Jan '21
Technology innovation team

- Bayesian Optimization for Material Design.
- Multi Object Tracking - Using Kalman filters for state estimation and Hungarian algorithm for data association.
- Deep Learning for Gaze Estimation.
- Edge Deployment of Deep Learning Models - Deploying pytorch models on Android by converting to ONNX and using OpenCV as a backend for inference.

Researcher
National University of Singapore Sep '17–Jul '18
Adaptive Computing Lab, Prof David Hsu

- Imitation Learning for autonomous driving in an unstructured environment. Publishing research at Robotics: Science and Systems (RSS) 2019.
- Feature rich visualization tool based on Python Tkinter to visualize and debug QMDPNet, a deep learning algorithm for solving POMDPs.
- Robust position controller on the Fetch robot.

Research Assistant
Robotics Research Center, International Institute of Information Technology
Hyderabad, India Apr '17-Jul '17
Mahindra Driverless Car Challenge

· Robust system for traffic sign detection, recognition and tracking.

Computer Vision Engineer
Ducere Technologies Pvt Ltd
Hyderabad, India Jul '16–Apr '17

· Low cost LiDAR system using a Teraranger One ToF sensor on a pan tilt unit for 3D scanning.

Research Assistant
Robotics Research Center, International Institute of Information Technology
Hyderabad, India Jun '15-Jul '16

· End-to-end learning based approach for visual servoing in diverse scenes. Published research at ICRA 2019.
· Implementation of 'Guess from Far Recognise when Near', a system for object search in unknown environments via frontier based navigation, far object recognition using 2D image segmentation and near object recognition using a bag of words model trained on 3D point clouds.
· Deep Learning for Table Interest Point Detection using cues from semantic segmentation and vanishing lines.
· Automating GrabCut for Multilabel Image Segmentation - Multi label image segmentation without user guidance by learning a Gaussian mixture model for each label and performing alpha expansion algorithm using MRF2.2 Library.

Research Intern
Strand Life Sciences Pvt. Ltd.
Bangalore, India May '14–Jul '14

· Decision Trees and Support Vector Machines for classifying cancerous mutations.

Scholarships and Certificates

Kishore Vaigyanik Protsahan Yojana Fellowship(KVPY)
Department of Science and Technology, Government of India. 2011–2016
All India Rank 1 - National Cyber Olympiad 2010
Climate Reality Leadership Corps 2020

Publications

Multi-Task Learning for Budbreak Prediction
Aseem Saxena, Paola Pesantez-Cabrera, Rohan Ballapragada, Markus Keller, Alan Fern
Workshop on AI for Agriculture and Food Systems, Association for Advancement of Artificial Intelligence (AAAI) 2023(Accepted) Link
Grape Cold Hardiness Prediction via Multi-Task Learning
Aseem Saxena, Paola Pesantez-Cabrera, Rohan Ballapragada, Kin-Ho Lam, Markus Keller, Alan Fern
IAAI (Innovative Applications of Artificial Intelligence), 2023 (Accepted) Link
Formalizing the Problem of Side Effect Regularization
Alexander Matt Turner*, Aseem Saxena*, Prasad Tadepalli
Equal Contribution, NeurIPS ML Safety Workshop 2022 (Accepted) Link
Sim-to-Real Learning of Footstep-Constrained Bipedal Dynamic Walking
Helei Duan, Ashish Malik, Jeremy Dao, Aseem Saxena, Kevin Green, Jonah Siekmann,
Alan Fern, Jonathan Hurst
IEEE ICRA (International Conference on Robotics and Automation), 2022 (Accepted) Link
Exploring Convolutional Networks for End-to-End Visual Servoing
Aseem Saxena*, Harit Pandya*, Gourav Kumar, K. Madhava Krishna

Equal Contribution, IEEE ICRA
(International Conference on Robotics and Automation), 2017 (Accepted) Link
LeTS-Drive: Driving in a Crowd by Learning from Tree Search
Panpan Cai, Yuanfu Luo, Aseem Saxena, David Hsu, Wee Sun Lee
RSS (Robotics Science and Systems) 2019 (Accepted) Link

Relevant Coursework

Intelligent Agents and Decision Making, Deep Learning, Optimization, Linear Algebra, Data Analysis in Social Science, Fundamentals of Statistics, Machine Learning, Complex Analysis, Multivariate Calculus, Differential Equations, Probability and Statistics, Control Systems, Signals and Systems, Communication Systems, Object Oriented Programming

Skills

Distributed Computing	Ray, MultiProcessing
Deep Learning	Pytorch, Tensorflow, Caffe
Computer Vision	OpenCV, Point Cloud Library
Robotics Platforms	Nvidia Omniverse, Mujoco, Robot Operating System(ROS) Unity, Gazebo, OpenRAVE
Programming Languages	Python, C/C++, JAVA, MATLAB
Audio and Video Editing	Logic Pro X, Final Cut Pro X, Cubase, Kdenlive, Audacity

Extra-Cirrucular Activities

Faculty Relations Chair at the AI Graduate Student Association in Oregon State University.(2022)
Faculty Relations Chair at the Robotics Graduate Student Association in Oregon State University. (2021)
thegradient.pub - Writing articles on recent developments and long term trends in Artificial Intelligence.
Amateur Triathlete
Stanford Scholar Initiative - Active Participant
Guitarist, Bassist, Vocalist and Keyboardist at Music Club BITS Pilani.