

SIDDHARTH MYSORE

VANCOUVER, BRITISH COLUMBIA – CANADA

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EDUCATION	Ph.D. Computer Science – Boston University [Aug 2017 – Aug 2022] Dissertation Title Conditioning Behavior Styles of Reinforcement Learning Policies Research Advisor Kate Saenko GPA 3.90
	MSE Robotics – University of Pennsylvania [Aug 2014 – Dec 2016] GPA 3.75
	MEng Mechatronic Engineering – The University of Nottingham [Sep 2010 – Aug 2014] <i>Graduated in the First Class with Honors</i> Average Grade 80% High Achievers Scholarship [2010 – 2014] Dean’s List of Top Performing Students in the Department of Electrical and Electronic Engineering [2012 – 2014]
TECHNICAL SKILLS	Programming (Primary) Python, PyTorch, TensorFlow (Secondary) C, C++, C#, Java, Unity, OpenCV, MATLAB, ROS, OpenGL, Caffe
	Computer Aided Design (CAD) SolidWorks, AutoCAD, PTC ProEngineer and Creo, Onshape
	Electronics Design Circuit Design, PCB design and population
	Machining & Fabrication Laser Cutting, 3D Printing, Turning, Milling, Drilling, Tapping, Threading, Welding
WORK EXPERIENCE	Machine Learning Engineer in Sports Technology – Electronic Arts (EA SPORTS) [Dec 2023 - Present] Working with a specialized team (the A-Team) to advance applications of ML in simulation, animation and character control. Researched, Developed and Deployed ML tools for EA SPORTS F1 and EA SPORTS FC, and contribute internally within Sports Tech.
	A.I. Scientist III – Electronic Arts (Central Tech) [Aug 2022 – Dec 2023] Researched, designed, and prototyped novel unsupervised machine learning mapping tools for automated player play-style analysis (patent application submitted). Researched techniques for more generalized gameplay A.I. (won ‘Tools and Platform’ division at internal WhatIf technical fair)
	A.I. Intern – Electronic Arts [May – Aug 2020], [May – Aug 2021], [Sep – Dec 2021] Researched and published Reinforcement Learning tools for A.I. agents in games to learn and play with different behavior styles. Developed novel actor-critic training architectures to efficiently learn multiple play styles while significantly reducing runtime cost of using learned controllers and developed frameworks for blending reinforcement and imitation learning for play-styles.
	Research Assistant – University of Pennsylvania [Jun 2016 – May 2017] Assisted in design, fabrication, construction, and programming of custom-built quadrotor drones for autonomous flight research. Researched novel computer vision-based techniques for fast and accurate product identification.
PUBLICATIONS	Ph.D. Dissertation Mysore, S. ; <i>Conditioning Behavior Styles of Reinforcement Learning Policies</i> , Boston University Library, 2022
	Publications
	Mysore, S. , Cheng, G., Zhao, Y., Saenko, K., Wu, M.; <i>Multi-Critic Actor Learning: Teaching RL Policies to Act with Style</i> ; <i>International Conference on Learning Representations (ICLR)</i> , 2022
	Gongora, A.E., Mysore, S. , Li, B. et al. ; <i>Designing Composites with Target Effective Youngs Modulus using Reinforcement Learning</i> ; <i>ACM Symposium on Computational Fabrication (SCF)</i> , 2021, DOI: https://doi.org/10.1145/3485114.3485123
	Mysore, S. , Mabsout, B., Mancuso, R., Saenko, K.; <i>Regularizing Action Policies for Smooth Control with Reinforcement Learning</i> ; <i>IEEE International Conference on Robotics and Automation (ICRA)</i> , 2021
	Mysore, S. , Mabsout, B., Mancuso, R., Saenko, K.; <i>Honey, I Shrunk the Actor: A Case Study on Preserving Performance with Smaller Actors in Actor-Critic RL</i> ; <i>IEEE Conference on Games (CoG)</i> , 2021
	Mysore, S. , Mabsout, B., Saenko, K., Mancuso, R.; <i>How to Train your Quadrotor: A Framework for Consistently Smooth and Responsive Flight Control via Reinforcement Learning</i> ; <i>ACM Trans. Cyber-Phys. Syst.</i> 5, 4, Article 36 (October 2021), DOI: https://doi.org/10.1145/3466618
	Preprints
	Mysore, S. , Cheng, G., Zinno, F., Zhao, Y., Saenko, K.; <i>Split-Critic Imitation Learning for Balancing Conflicting Imitation and Reinforcement Learning Objectives</i> ; 2023
	Mabsout, B., Roozkhosh, S., Mysore, S. , Saenko, K., Mancuso, R.; <i>The SwaNNFlight System: On-the-Fly Sim-to-Real Adaptation via Anchored Learning</i> ; 2022 (alternate: <i>Sim-Anchored Learning for On-the-Fly Adaptation</i> , 2025)
Mysore, S. , Platt, R., Saenko, K.; <i>Reward-guided Curriculum for Robust Reinforcement Learning</i> ; 2019	
Workshops	
Mysore, S. , Platt, R., Saenko, K.; <i>Reward-guided Curriculum for Learning Robust Action Policies</i> ; Workshop on Multi-task and Lifelong Reinforcement Learning at ICML 2019	

ACADEMIC RESEARCH EXPERIENCE	Improving Practical Robustness and Cross-Domain Policy Transfer in Reinforcement Learning [Aug 2017 – Aug 2022] Research Advisor Prof. Kate Saenko; Boston University Investigating techniques to improve the practical utility of learned control policies and to bridge the domain gap when applying them subject to distributional shift, with primary applications in robotics and videogames. Developed automated bandit-based learning scheme for developing Reinforcement Learning control policies that are robust to perturbations in actor environments (published at: <i>MTLRL Workshop ICML 2019</i>). Developed an intuitive training regularization scheme for generally improving smoothness of learned policies without additional runtime computation while achieving significant reduction in power consumption (published at: <i>ICRA 2021</i>). Studied and characterized the impact of Actor-Critic deep RL architectures on network architectures and demonstrated that careful tuning of network sizes allow for highly performant yet compact policy networks (published at: <i>CoG 2021</i>). Developed tools for single controllers to learn multiple tasks or behavior styles – continuation and extension of Summer 2020 internship work done with Electronic Arts (published at: <i>ICLR 2022</i>). Developed techniques for blending Reinforcement and Imitation Learning while avoiding conflicts in the optimization criteria.
	Neural Network based Flight Control for High Performance Racing Drones [Apr 2019 – Aug 2022] Collaboration With Prof. Renato Mancuso; Boston University Designed novel training regime to improve the accuracy and stability of reinforcement learning-based control output in deploying neural network flight-controller models trained in simulation to real drone hardware (published at: <i>TCPS 2021, ICRA 2021</i>) Developed extension for online learning and hot-swapping neural network graph for adjusting control on the fly. (<i>preprint</i>)
	Reinforcement Learning Aided Design [Mar 2018 – Aug 2021] Collaboration With Profs. Emily Whiting, Keith Brown, Elise Morgan & Wojciech Matusik (MIT); Boston University Developed a Reinforcement Learning based pipeline to automatically adjust designs of composites to satisfy specific physical properties with 95% success rate and significant runtime speed-up (published at: <i>SCF 2021</i>).
	Autonomous Flight Guided by Event-Based Camera [Jul – Apr 2017] Supervising Professor Prof. Kostas Daniilidis; University of Pennsylvania, GRASP Lab Developed vision-based quadrotor flight control with using event-based (iniVation DVS) cameras, as part of a group effort. Designed and built custom quadrotors to serve as testing platforms. <i>Specific responsibilities:</i> State estimation and controller design; Hardware design, construction and management.
	Product ID and Retrieval from Large Catalogues [Jun – Nov 2016] Supervising Professor Prof. Kostas Daniilidis; University of Pennsylvania, GRASP Lab Developed logVLAD - a framework for efficient multi-class product labeling and localization in natural images of shelves in stores, using logarithmically scaled VLAD image encodings, with high precision, better response to feature burstiness, and good energy distribution (<i>work contributed to Master's Thesis</i>).
	Low Cost Manipulation (LoCoMa) [Mar 2016 – May 2017] Supervising Professor Prof. Mark Yim; University of Pennsylvania, GRASP Lab – Modular robotics Lab (ModLab) Helped prototype a novel, low cost, 0-DoF end-effector and manipulation scheme.
	Camera Localization [May – Aug 2015] Supervising Professor Prof. Jianbo Shi; University of Pennsylvania, GRASP Lab Implemented real-time image-based camera localization in known 3D spaces using feature matching, visual odometry and SfM. Investigated application of deep-learning in characterizing the camera motion between sequential images Developed method and software to interface with existing Vicon hardware infrastructure to track of multiple objects in real-time.
	ACADEMIC SERVICE
Reviewer for IEEE International Conference on Robot Systems (IROS) [2022, 2023]	
Reviewer for IEEE International Conference on Robotics and Automation (ICRA) [2022, 2025]	
Reviewer for Conference on Neural Information Processing Systems (NeurIPS) [2021 - 2023]	
Reviewer for Conference on Robot Learning (CoRL) [2021 - 2024]	
Reviewer for IEEE Conference on Games (CoG) [2021 - 2026]	
Coordinator for Image and Video Computing (IVC) group meetings and website at BU [Aug 2018 – May 2020] Managed planning duties for IVC's weekly meetings and managed the group's website	
Technical advisor for AI4ALL Summer Program [May – Aug 2019] Trained undergraduates involved in the AI4ALL program at Boston University to develop and execute Machine Learning code	
Reviewer for the Machine Learning Journal [Jun 2019]	
TEACHING	Boston University Guest Lecturer – CS 542 Machine Learning (Fall 2021) Teaching Assistant – CS 542 Machine Learning (Spring 2022) Grader – CS 581 Computational Fabrication (Spring 2022), CS 480/680 Introduction to Computer Graphics (Fall 2019, Fall 2020), CS 542 Machine Learning (Fall 2018, Spring 2020), CS 440 Artificial Intelligence (Fall 2020)
	University of Pennsylvania Teaching Assistant – CIS 581 Computer Vision and Computational Photography (Fall 2015)

INVITED TALKS	Electronic Arts ML For Animation	[Feb 2023]
	Electronic Arts Research Deep Dive	[Jul 2021]
	Boston University AI Research (AIR) Initiative	[Apr 2021]
	Electronic Arts ML Special Interest Group	[Aug 2020]
	Boston University Image and Video Computing (IVC) Student Talk	[Aug 2020]
TECHNICAL REPORTS & SELECTED COURSEWORK	University of Pennsylvania	
	Master's Thesis – logVLAD: A Novel Pipeline for Image Retrieval (see notes on Product ID research for details)	
	Stereo Visual Odometry Implemented and compared different approaches to stereo visual odometry against the KITTI vision benchmark suite. Implementations computed odometry by solving the 3D-3D affine Procrustes problem, by solving the 3D-2D Perspective-n-Point (PnP) problem, and by using optical flow.	
	Learning Path-planning Extracted feature-maps from a satellite-view map using Gaussian Mixture Models (GMMs) trained to recognize colors, and used them to build a cost-map over which Dijkstra's and A* algorithms were applied to determine the best traversable path between arbitrary start and goal set on the map.	
	Gesture Recognition Applied Hidden Markov Models towards learning to recognize hand gestures utilizing inputs from an Inertial Measurement Unit (IMU) attached to the arm.	
	Autonomous Quad-rotor Flight Implemented programs to facilitate autonomous path-planning and flight control in real-time on research- and consumer-grade quad-rotor drones.	
	Reconstructing 3D Scenes from Image Sequences Applied concepts of Structure from Motion (SfM) and epipolar geometry to build sparse 3D scene reconstructions from a sequence of images.	
	Face Replacement in Images Developed a program that attempts to seamlessly replace faces detected in an image with some other face, with skin-tone blending and masking to account for face rotations.	
	Light-Painting with a Robot Arm Modeled DH-parameters and Inverse Kinematics of a robot arm to plan and execute the 'painting' of a picture with an LED mounted at the arm's tool-tip, captured on a long-exposure image.	
	Machine Learning applied to Pricing Estimation Utilized several machine learning techniques attempts to estimate a price range for real-estate listings using bags of words provided to describe each listing.	
LANGUAGE SKILLS	The University of Nottingham	
	4th-Year Group Design Project – Automated Search and Rescue Robot with 3D Environment Mapping	
	Supervising Professor Prof. Kevin Lee <i>Specific area of focus:</i> Object Detection and Recognition for robot guidance. Constructed a mobile robotic platform which used computer-vision-guided navigation and arm control for collecting rescue pre-determined rescue targets.	
	English (1 st Language) – Proficient; TOEFL Score 120 [max.](Oct 2013); CELPIP Avg. Score 12 [max.](Dec 2024)	
	German – Certified to the A2 level (Aug 2011); Studied at the B1 level (Sep 2013 – Apr 2014)	
	Kannada – Basic conversational ability	