Soroush Saryazdi

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ACADEMIC HISTORY

2019-Present **M.Sc. (Research), Computer Science**, Expected April 2021
Concordia University, Canada
Supervisor: Dr. Sudhir Mudur
GPA: 4.3/4.3

2014-2018 **B.Sc., Electrical Engineering** (subfield: Electronics)
Shahid Bahonar University of Kerman, Iran
GPA: 18.14/20

2010-2014 **High School Diploma in Mathematics and Physics**
National Organization for Development of Exceptional Talents (NODET)

PUBLICATIONS

- **Soroush Saryazdi**, Christian Murphy, and Sudhir Mudur. "Disentangled Rendering Loss for Supervised Material Property Recovery", *GRAPP, 2021*. (Best Student Paper Award) [Paper]

- Krishna Murthy Jatavallabhula*, **Soroush Saryazdi***, Ganesh Iyer, and Liam Paull. "∇SLAM: Automagically differentiable SLAM", extended version (to be submitted), *Currently in ArXiv preprint*, 2020. (*Equal contribution) [Project page] [Paper] [Code]

- **Soroush Saryazdi**, Christian Murphy, and Sudhir Mudur. "The Problem of Entangled Material Properties in SVBRDF Recovery", *Eurographics Workshop on Material Appearance Modeling*, 2020. [Paper]

- Krishna Murthy Jatavallabhula, Ganesh Iyer*, **Soroush Saryazdi***, and Liam Paull. "∇SLAM: Automagically differentiable SLAM", *Deep Declarative Networks Workshop of CVPR*, 2020. (*Equal contribution) [Paper]

- **Soroush Saryazdi**, Bahar Nikpour, and Hossein Nezamabadi-pour. "NPC: Neighbors' Progressive Competition Algorithm for Classification of Imbalanced Datasets", *Signal Processing and Intelligent Systems (ICSPIS), International Conference of*. IEEE, 2017. [Paper]

SCHOLARSHIPS, AWARDS, AND OTHER ACADEMIC HONOURS

2021 Our paper titled "Disentangled Rendering Loss for Supervised Material Property Recovery" won the best student paper award at GRAPP 2021.

2019 Concordia Merit Scholarship, Concordia University.

2018 Ranked 2nd in Electrical Engineering department among 98 entrants of 2014.

2018 3rd place in "Iran FIRAcup Open" 2018 robotics competition, Iran.

2015 Talented Students Scholarship, Shahid Bahonar University of Kerman.

2010 Admitted to National Organization for Development of Exceptional Talents (NODET) highschool through national entrance exam with ‹1% acceptance rate, Iran.

RESEARCH AND PROFESSIONAL EXPERIENCE

2020 - Present	**gradslam: Open-source Differentiable SLAM Library for PyTorch** Co-led the development of the gradslam open-source library for differentiable dense 3D reconstruction in PyTorch (875 stars, 101 forks as of April 2021). In collaboration with Mila. [Code]
2020 - Present	**Collaborating Researcher at REAL Lab**, Mila Integrating deep learning with 3D dense SLAM approaches. Ongoing works on monocular depth estimation using differentiable rendering, and simultaneous BRDF and 3D geometry reconstruction from RGB-D sequences. **Collaborators**: Dr. Liam Paull, Dr. Derek Nowrouzezahrai, Krishna Murthy
2019 - Present	**Researcher at 3D Graphics Lab**, Concordia University Working on understanding perceptual and 3D data using Deep Learning, such as recovering material appearance parameters from images. **Supervisor**: Dr. Sudhir Mudur
2019 - 2020	**Project**: Using deep learning for autonomous Duckiebot navigation with vehicle avoidance. [Code]
2017 - 2018	**Researcher at IDPL Lab**, Shahid Bahonar University Worked on algorithmic level approaches for classifying Imbalanced Datasets. Work resulted one publication in ICSPIS 2017. **Supervisor**: Dr. Hossein Nezamabadi-pour
2017 - 2018	**University Robotics Team**, Shahid Bahonar University Implemented the object detection, navigation, and camera-arm coordination of the robot in Python (using OpenCV and ROS). Work resulted in 3rd place in "Iran FIRAcup Open" 2018 robotics competition.
2017 - Present	**Teaching Assistant**: - Deep Learning, Concordia University, Winter 2021 - Machine Learning, Concordia University, Fall 2020 and Winter 2021 - Advanced Graphics, Concordia University, Fall 2020 - Probability and Statistics, Concordia University, Winter 2019 - Programming and Problem Solving, Concordia University, Fall 2019 - Digital Image Processing, Shahid Bahonar University, Winter 2018 - Statistical Pattern Recognition, Shahid Bahonar University, Fall 2017 - Computer Systems Architecture, Shahid Bahonar University, Fall 2017 - Engineering Mathematics, Shahid Bahonar University, Winter 2017

TALKS

2021	GRAPP - **Disentangled Rendering Loss for Supervised Material Property Recovery**
2020	GRAPHQUON - **Online Dense 3D Reconstruction with Material Properties**
2020	Eurographics: Material Appearance Modeling - **The Problem of Entangled Material Properties in SVBRDF Recovery**
2017	ICSPIS - **NPC: Neighbors' Progressive Competition Algorithm for Classification of Imbalanced Datasets**

PROFESSIONAL SERVICE AND VOLUNTEERING

2021	Peer reviewer for "Engineering Applications of Artificial Intelligence" journal.

Relevant Courses

MILA IFT6135 Representation Learning	(A+)	Machine Learning	(18.5/20)
SOEN691 Big Data Analytics	(A+)	Statistical Pattern Recognition	(18/20)
MILA IFT6757 Autonomous Vehicles	(A+)	COMP6761 Advanced Graphics	(A+)
Engineering Statistics and Probability	(20/20)	Digital Image Processing	(20/20)

Online Courses:
Stanford CS231n: Convolutional Neural Networks for Visual Recognition •
Coursera Machine Learning by Stanford • Coursera Algorithms Part I by Princeton