

Soroush SARYAZDI

Montréal, Canada

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ACADEMIC HISTORY

- 2019-2021 **M.Sc. (Research), Computer Science**, Concordia University, Canada.
Supervised by Sudhir Mudur, GPA: 4.3/4.3
- 2014-2018 **B.Sc., Electrical Engineering**, 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), Iran. GPA: 18.60/20

EMPLOYMENT HISTORY

- 2021-Now **Deep Learning Research Engineer at Matician, Inc.**, Mountain View, USA
- Training and deployment of state-of-the-art scene understanding neural networks
 - Setting up a reproducible training and deployment pipeline
 - Setting up pipelines for neural network monitoring

RESEARCH AND PROFESSIONAL EXPERIENCE

- 2020 - 2021 **gradslam: Open-source Differentiable SLAM Library for PyTorch**, Mila
Led development of the gradslam open-source library for differentiable dense 3D reconstruction in PyTorch (1.1K stars as of Sept 2022). [\[Code\]](#)
- 2020 - 2021 **Collaborating Researcher at REAL Lab**, Mila
Integrated deep learning with 3D dense SLAM approaches for monocular depth estimation using differentiable rendering, and simultaneous BRDF and 3D geometry reconstruction from RGB-D sequences.
Collaborators: Liam Paull, Derek Nowrouzezahrai, Krishna Murthy
- 2019 - 2021 **Researcher at 3D Graphics Lab**, Concordia University
Worked on understanding perceptual and 3D data using Deep Learning, such as recovering material appearance parameters from images.
- 2019 - 2020 **Duckietown Project:** Using deep learning for autonomous Duckiebot navigation with vehicle avoidance. [\[Code\]](#) [\[Documentation\]](#)
- 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: 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).
- 2019 - 2021 **Teaching Assistant**, Concordia University
Courses: Deep Learning (Winter 2021) • Machine Learning (Fall 2020 and Winter 2021) • Advanced Graphics (Fall 2020) • Probability and Statistics (Winter 2019) • Programming and Problem Solving (Fall 2019)
- 2017 - 2018 **Teaching Assistant**, Shahid Bahonar University
Courses: Digital Image Processing (Winter 2018) • Statistical Pattern Recognition (Fall 2017) • Computer Systems Architecture (Fall 2017) • Engineering Mathematics (Winter 2017)

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 team amongst 8 teams in "Iran FIRAcup Open" 2018 robotics competition, Iran. (ranked 4th overall as no first place was declared)
- 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.

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

- 2022 Reviewer, ICLR (conference) ([highlighted reviewer](#))
- 2022 Reviewer, ICML (conference)
- 2021 Reviewer, NeurIPS (conference)
- 2021 Reviewer, Applied Intelligence (journal)
- 2021 Reviewer, 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