

KARUSH SURI

[LinkedIn](#) ◇ [Google Scholar](#) ◇ [GitHub](#)

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RESEARCH INTERESTS

Karush is a Deep Learning Researcher at Huawei Noah's Ark Lab in Toronto. His research focuses on developing intelligent learning systems which can establish a balance between the theoretical uncertainty and practical viability of sequential decision-making and inference. Through this lens, Karush studies the computational principles underlying Energy-based Reinforcement Learning when constrained with limited and safe interactions.

EDUCATION

University of Toronto

2019 - 2021

Master of Applied Science (M.A.Sc)

Toronto, Canada

- Department: Electrical & Computer Engineering
- Thesis: Deep Hierarchical Reinforcement Learning ([link](#)) ([video](#))
- Advisors: Dr. Yuri Lawryshyn & Dr. Konstantinos Plataniotis
- GPA: 4/4

Amity University

2015 - 2019

Bachelor of Technology (B.Tech)

Delhi, India

- Department: Electronics & Communication Engineering
- Thesis: Application of Deep Learning & Game Theory for Sign Language Recognition using Wearable Sensors ([link](#))
- Advisor: Dr. Rinki Gupta
- GPA: 8.78/10

SCHOLARSHIPS & AWARDS

University of Toronto, Canada

Electrical & Computer Engineering Fellowship

2020-2021

Edward S. Rogers Graduate Scholarship

2019-2020

Amity University, India

Best in Technical Innovation Award (class of 2015-2019)

2019

Most Frugal Innovation Award

2018

100% Curriculum Merit Scholarship

2015

Others

Young Achievers Award

2015

RESEARCH APPOINTMENTS

Huawei Noah's Ark Lab

2021 - Present

Deep Learning Researcher

Toronto, Canada

- Advisor: Dr. Jun Luo
- Project: Graph Representational Learning for Logic Synthesis

Robot Vision & Learning (RVL) Lab, University of Toronto*Visiting Researcher*2021 - Present
Toronto, Canada

- Advisor: Dr. Florian Shkurti
- Project: Overconservatism in Offline Reinforcement Learning

Borealis AI*Thesis Researcher*2019 - 2021
Toronto, Canada

- Advisor: Xiao Qi Shi
- Project: Deep Hierarchical Reinforcement Learning

CMTE, University of Toronto*Graduate Research Assistant- Reinforcement Learning*2019 - 2021
Toronto, Canada

- Advisors: Dr. Yuri Lawryshyn & Dr. Konstantinos Plataniotis
- Project: Deep Hierarchical Reinforcement Learning

Signal Processing Lab, Amity University*Undergraduate Research Assistant- Deep Learning*2017 - 2019
Delhi, India

- Advisor: Dr. Rinki Gupta
- Project: Application of Deep Learning & Game Theory for Sign Language Recognition using Wearable Sensors

PUBLICATIONS

- Karush Suri, Xiao Qi Shi, Konstantinos N. Plataniotis, Yuri A. Lawryshyn, “*Energy-based Surprise Minimization for Multi-agent Value Factorization*”, DRLW NeurIPS 2020. ([website](#)) ([arXiv](#))
- Karush Suri, Xiao Qi Shi, Konstantinos N. Plataniotis, Yuri A. Lawryshyn, “*Maximum Mutation Reinforcement Learning for Scalable Control*”, DRLW NeurIPS 2020. ([website](#)) ([arXiv](#))
- Karush Suri, Rinki Gupta, “*Continuous Sign Language Recognition from Wearable IMUs using Deep Capsule Networks and Game Theory*”, Computers And Electrical Engineering, Elsevier, Vol. 78, 2019. ([arXiv](#)) ([code](#))
- Karush Suri, Rinki Gupta, “*Transfer Learning for sEMG-based Hand Gesture Classification using Deep Learning in a Master- Slave Architecture*”, IEEE IC3I 2018 (**oral**). ([arXiv](#)) ([code](#))

TEACHING ASSISTANTSHIPS

- ECE1512H *Digital Image Processing and Applications*, University of Toronto (Winter 2021)
- CSC104H *Computational Thinking*, University of Toronto (Winter 2021)
- CSC2209H *Computer Networks*, University of Toronto (Fall 2020)
- CSC458H *Computer Networking Systems*, University of Toronto (Fall 2020)
- CSC258H *Computer Organization*, University of Toronto (Winter 2020)
- MATH *Integral Calculus*, Sai Kripa Orphanage (Summer 2016)
- MATH *Numerical Differentiation*, Sai Kripa Orphanage (Summer 2016)
- MATH *Linear Algebra*, Sai Kripa Orphanage (Summer 2016)

INTERNSHIP EXPERIENCE**EdAuthority***Content Management Intern- Data Science*2018-2019
Delhi, India

- Published blog posts on data science concepts and their extensions to the education industry.
- Backend website management and development of scalable solutions for a digital platform.

Airtel

2018

Summer Engineering Intern

Delhi, India

- Project entitled “Fundamentals of Network Communication”.
- Calibrated network interface cards and connectivity sensors for throughput handling.

Reliance Jio

2017

Summer Engineering Intern

Delhi, India

- Project entitled “Excel Data Processing Automator using Python Programming”.
- Automated excel data management for spreadsheet handling and cell-to-cell logging.

Sony

2016

Summer Engineering Intern

Delhi, India

- Project entitled “LCD Television Systems and BRAVIA Engine Applications”.
- Programmed BRAVIA engine cards for video processing and image analysis.

ORGANIZATIONAL WORK & SERVICES

IEEE Signal Processing & Integrated Networks (SPIN)

2017-2019

Lead Organizer

Delhi, India

- Head of the stage team at 6th SPIN.
- Member of the coordinating committee at 5th SPIN.
- Member of the volunteering committee at 4th SPIN.

Signal Processing Lab, Amity University

2017-2019

Lab Assistant

Delhi, India

- Hand motion data collector for lab test subjects.
- sEMG and IMU sensor calibrator for real-time demonstrations.

TECHNICAL SKILLS

Languages- Python, Lua, HTML, C, C++, Assembly, Markdown, MATLAB, L^AT_EX.

Frameworks- PyTorch, Tensorflow, torch7, Numpy, Gym, MuJoCo, Flask, ROS.

Platforms- Amazon Web Services, Google Cloud Platform, Git.