Krishna Murthy Jatavallabhula

Al Research Scientist | Meta

🗞 Webpage 🕠 github.com/krrish94 🛛 krrish94@gmail.com 🛮 in linkedin.com/in/krrish94

♥ Berkeley, CA i USA

EDUCATION

2018-2022 PhD. in Computer Science, Université de Montréal, Montréal, Canada. Thesis (letter) GPA: 4.15/4.00

grade: exceptional.

2015-2017 MS by research in Computer Science and Engineering, International Institute of In-GPA: 10.00/10.00

formation Technology, Hyderabad, India.

M.Sc. (Tech.) Information Systems (Bachelor's degree), Birla Institute of Science and 2011-2015 GPA: 6.71/10.00

Technology (BITS), Pilani, India.

■ Work

September 2024 Al Research Scientist, FAIR, Meta

> Present FAIR (Fundamental AI Research) Robotics

> > Robot learning

March 2022 Postdoctoral associate | MIT, (CoCoSci and CSAIL), Cambridge, USA

September 2024 With Josh Tenenbaum and Antonio Torralba

Multisensory and multimodal perception Differentiable probabilistic programming Physical understanding Robotics

September 2021 Course instructor | McGill University, Montreal, Canada,

Co-designed and taught Advanced Image Synthesis (ECSE 446/546) December 2021

Computer graphics Rendering Differentiable programming

May 2021 Research intern | NVIDIA, SEATTLE ROBOTICS GROUP, (Remote)

August 2021 With Dieter Fox, Animesh Garg, and Fabio Ramos.

Robotics Deep learning Computer graphics Computer vision

May 2019 Deep Learning Research Intern | NVIDIA, TORONTO AI LAB, Canada

August 2019 With Sanja Fidler. Led the development of Kaolin, a 3D deep learning library for PyTorch.

Deep learning | Computer vision | Computer graphics |

Select Honors and Awards

- Microsoft future leader in robotics and AI Cohort of 14 leading PhD students and postdocs in the US.
- 2021 NVIDIA graduate fellowship One of 5 fellowships awarded worldwide
- Google PhD fellowship One of 3 fellowships awarded in North America in the Machine perception, Speech 2021 technology, and Computer vision category (10 worldwide) (declined)
- RSS pioneer 2020. Selected to the Robotics Science and Systems pioneers cohort of 2020, a group of 22 2020 leading senior PhD students and postdocs worldwide.
- 2020 Best paper award. Our paper titled Maplite: Autonomous intersection navigation without a detailed prior map won the best paper award for 2020, announced by Robotics and Automation Letters.
- 2021 Outstanding reviewer for the IEEE Robotics and Automation Letters, 2020.
- **Outstanding reviewer** for the International Conference on Learning Representations 2021
- 2021 Outstanding reviewer for the IEEE international conference on Computer Vision and Pattern Recognition
- 2020 **Top reviewer** for the European Conference on Computer Vision (ECCV), 2020 (1 out of 215 awards)
- 2019 **DIRO Excellence Award** for research and academic (second consecutive year)
- 2018 ICRA PhD Forum. Selected to present my work at the PhD Forum, ICRA 2018, in my first semester as a PhD student. Received generous travel support.
- 2018 **DIRO Excellence Award** for research and academic excellence from DIRO, Université de Montréal.
- 2017 **Graduated top of class.** Graduated with a GPA of 10.00/10.00 during my Masters at IIIT Hyderabad.



SELECT GRANT PROPOSALS

- Army Research Lab. "Open-world, Interpretable, Multimodal Models for Intelligent Autonomy". Co-written 2023 with Antonio Torralba and Sarah Schwettmann.
- Army Research Lab. "Multimodal generative world models". Co-written with Antonio Torralba and Josh 2022 Tenenbaum.
- 2020 IVADO fundamental research grant. "Differentiable perception, graphics, and optimization for weakly supervised 3D perception". Co-written with 3 principal investigators (PI): Liam Paull, James Forbes, Derek
- Facebook unrestricted research gift. "Bridging Bayesian optimization and differentiable simulation". Co-2021 written with Jeannette Bohg (PI) and Rika Antonova (co-PI).
- 2014 L K Maheshwari Grant. Awarded a seed grant for a proposal involving cooperative navigation of a heterogeneous swarm of aerial and ground robots.

FEATURED PUBLICATIONS AND PREPRINTS

- * equal first-authorship † indicates equal advising
 - F4. CONCEPTGRAPHS: OPEN-VOCABULARY 3D SCENE GRAPHS FOR PERCEPTION AND PLANNING. ICRA 2024 Qiao Gu*, Ali Kuwajerwala*, Sacha Morin*, **Krishna Murthy Jatavallabhula***, Bipasha Sen, Aditya Agarwal, Corban Rivera, William Paul, Kirsty Ellis, Rama Chellappa, Chuang Gan, Celso Miguel de Melo, Joshua B. Tenenbaum, Antonio Torralba, Florian Shkurti, Liam Paull. Z Project Page
 - F3. CONCEPTFUSION: OPEN-SET MULTIMODAL 3D MAPPING. RSS 2023 Krishna Murthy Jatavallabhula, Alihusein Kuwajerwala, Qiao Gu, Mohd Omama, Tao Chen, Shuang Li, Ganesh Iyer, Soroush Saryazdi, Nikhil Keetha, Ayush Tewari, Joshua B. Tenenbaum, Celso Miguel de Melo, Madhava Krishna, Liam Paull, Florian Shkurti, Antonio Torralba. 🗗 Project page
 - F2. GRADSIM: DIFFERENTIABLE SIMULATION FOR SYSTEM IDENTIFICATION AND VISUOMOTOR CONTROL. ICLR 2021 Krishna Murthy Jatavallabhula*, Miles Macklin*, Florian Golemo, Vikram Voleti, Linda Petrini, Martin Weiss, Breandan Considine, Jérôme Parent-Lévesque, Kevin Xie, Kenny Erleben, Liam Paull, Florian Shkurti, Derek Nowrouzezahrai. 🛭 🗗 Video ✓ OpenReview
- F1. GRADSLAM: Dense SLAM meets automatic differentiation. Krishna Murthy Jatavallabhula, Ganesh Iyer, Liam Paull. 🗹 Video 🖸 Project page

ICRA 2020



Refereed conference publications.

- * equal first-authorship † equal advising
- C27. LOCATE 3D: REAL-WORLD OBJECT LOCALIZATION VIA SELF-SUPERVISED LEARNING IN 3D. ICML 2025 Sergio Arnaud*, Paul McVay*, Ada Martin, Arjun Majumdar, Krishna Murthy Jatavallabhula, Phillip Thomas, Ruslan Partsey, Daniel Dugas, Abha Gejji, Alexander Sax, Vincent-Pierre Berges, Mikael Henaff, Ayush Jain, Ang Cao, Ishita Prasad, Mrinal Kalakrishnan, Michael Rabbat, Nicolas Ballas, Mido Assran, Oleksandr Maksymets, Aravind Rajeswaran[†], Franziska Meier[†].
- C26. GAUSSIAN SPLATTING VISUAL MPC FOR GRANULAR MEDIA MANIPULATION. ICRA 2025 Wei-Cheng Tseng, Ellina Zhang, Krishna Murthy Jatavallabhula, Florian Shkurti.
- C25. CONCEPTAGENT: LLM-DRIVEN PRECONDITION GROUNDING AND TREE SEARCH FOR ROBUST TASK PLANNING AND EXECUTION. ICRA Corban Rivera, Grayson Byrd, William Paul, Tyler Feldman, Meghan Booker, Emma Holmes, David Handelman, Bethany Kemp,
 - Andrew Badger, Aurora Schmidt, Krishna Murthy Jatavallabhula, Celso M de Melo, Lalithkumar Seenivasan, Mathias Unberath, Rama Chellappa.
- C24. SPLATAM: SPLAT, TRACK, AND MAP 3D GAUSSIANS FOR DENSE RGB-D SLAM. CVPR 2024 Nikhil Varma Keetha, Jay Karhade, Krishna Murthy Jatavallabhula, Gengshan Yang, Sebastian Scherer, Deva Ramanan, Jonathon Luiten.
- C23. IML: EFFICIENT 3D INSTANCE MAPPING AND LOCALIZATION. ICRA 2024 George Tang, Antonio Torralba, Krishna Murthy Jatavallabhula.
- C22. TALK2BEV: LANGUAGE-ENHANCED BIRD'S-EYE VIEW MAPS FOR AUTONOMOUS DRIVING. ICRA 2024 Vikrant Dewangan*, Tushar Choudhary*, Shivam Chandhok*, Shubham Priyadarshan, Anushka Jain, Arun Singh, Siddharth Srivastava, **Krishna Murthy Jatavallabhula**[†], Madhava Krishna[†].

C21. ANTICIPATE & ACT: INTEGRATING LLMs and Classical Planning for Efficient Task Execution in Household Environments. ICRA 2024

Raghav Arora, Shivam Singh, Karthik Swaminathan, Ahana Datta, Snehasis Banerjee, Brojeshwar Bhowmick, **Krishna Murthy Jatavallabhula**, Mohan Sridharan, Madhava Krishna.

 ${\tt C20.} \ \ {\tt Tactile} \ {\tt Estimation} \ \ {\tt of} \ {\tt Extrinsic} \ {\tt Contact} \ {\tt Patch} \ {\tt for} \ {\tt Stable} \ {\tt Placement}.$

ICRA 2024

- Kei Ota, Devesh K. Jha, **Krishna Murthy Jatavallabhula**, Asako Kanezaki, Joshua B. Tenenbaum.
- C19. LEARNING CORRESPONDENCE UNCERTAINTY VIA DIFFERENTIABLE NONLINEAR LEAST SQUARES. Dominik Muhle, Lukas Koestler, Krishna Murthy Jatavallabhula, Daniel Cremers.

CVPR 2023

- C18. PAC-NERF: PHYSICS-AUGMENTED CONTINUUM NEURAL RADIANCE FIELDS FOR GEOMETRY-AGNOSTIC SYSTEM IDENTIFICATION (SPOT-LIGHT TOP 25% OF ACCEPTED PAPERS).

 ICLR 2023

 Xuan Li, Yi-Ling Qiao, Peter Yichen Chen, Krishna Murthy Jatavallabhula, Ming Lin, Chenfanfu Jiang, Chuang Gan.
- C17. BAYESIAN OBJECT MODELS FOR ROBOTIC INTERACTION WITH DIFFERENTIABLE PROBABILISTIC PROGRAMMING.

 Krishna Murthy Jatavallabhula, Miles Macklin, Dieter Fox, Animesh Garg, Fabio Ramos.

CoRL 2022

- C16. **RETHINKING OPTIMIZATION WITH DIFFERENTIABLE SIMULATION FROM A GLOBAL PERSPECTIVE (ORAL TOP 6.5%).** CORL 2022 Rika Antonova*, Jingyun Yang*, **Krishna Murthy Jatavallabhula**, Jeannette Bohg.
- C15. *f*-Cal: Variational calibration of Aleatoric Uncertainty in Regression.

 Dhaivat Bhatt, Kaustubh Mani, Dishank Bansal, Hanju Lee, Krishna Murthy Jatavallabhula, Liam Paull.
- C14. TASKOGRAPHY: EVALUATING ROBOT TASK PLANNING OVER LARGE 3D SCENE GRAPHS. CoRL 2021 Christopher Agia*, Krishna Murthy Jatavallabhula*, Mohamed Khodeir, Ondra Miksik, Vibhav Vineet, Mustafa Mukadam, Liam Paull, Florian Shkurti.
- C13. **DRACO: Weakly Supervised Dense Reconstruction And Canonicalization of Objects**. ICRA 2021 Rahul Sajnani, AadilMehdi Sanchawala, **Krishna Murthy Jatavallabhula**, Srinath Sridhar, K. Madhava Krishna.
- C12. **AUTOLAY: BENCHMARKING MONOCULAR LAYOUT ESTIMATION**. IROS 2020 Kaustubh Mani, N. Sai Shankar, **Krishna Murthy Jatavallabhula**, K. Madhava Krishna.
- C11. MULTI-OBJECT MONOCULAR SLAM FOR DYNAMIC ENVIRONMENTS. IV 2020 Gokul Nair, Swapnil Daga, Rahul Sajnani, Anirudha Ramesh, Junaid Ahmed Ansari, Krishna Murthy Jatavallabhula, K. Madhava Krishna.
- C10. MonoLayout: Amodal scene layout from a SINGLE IMAGE. WACV 2020 Kaustubh Mani, Swapnil Daga, Shubhika Garg, N. Sai Shankar, Krishna Murthy Jatavallabhula, K. Madhava Krishna.
- C9. INFER: INTERMEDIATE REPRESENTATIONS FOR FUTURE PREDICTION.

 Shashank Srikanth, Junaid Ahmed Ansari, Karnik Ram R, Sarthak Sharma, Krishna Murthy Jatavallabhula, Madhava Krishna.
- C8. CALIBNET: GEOMETRICALLY-SUPERVISED EXTRINSIC CALIBRATION USING 3D SPATIAL TRANSFORMER NETWORKS.

 Ganesh Iyer, Karnik Ram R., Krishna Murthy atavallabhula, K. Madhava Krishna.
- C7. THE EARTH AIN'T FLAT: RECONSTRUTION OF VEHICLES ON STEEP AND BUMPY ROADS FROM A MONOCULAR CAMERA. IROS 2018
 Junaid Ahmed Ansari, Sarthak Sharma, Anshuman Majumdar, Krishna Murthy Jatavallabhula, K. Madhava Krishna.
- C6. Constructing Category-Specific Models for Monocular Object SLAM.

 Parv Parkhiya, Rishabh Khawad, Krishna Murthy Jatavallabhula, Brojeshwar Bhowmick, K. Madhava Krishna.
- C5. **BEYOND PIXELS: LEVERAGING GEOMETRY AND SHAPE CUES FOR MULTI-OBJECT TRACKING.**Sarthak Sharma, Junaid Ahmed Ansari, **Krishna Murthy Jatavallabhula**, K. Madhava Krishna.
- C4. Shape Priors for Real-Time Monocular Object Localization in Dynamic Environments. IROS 2017 Krishna Murthy Jatavallabhula, Sarthak Sharma, and K. Madhava Krishna.
- C3. RECONSTRUCTING VEHICLES FROM A SINGLE IMAGE: SHAPE PRIORS FOR ROAD SCENE UNDERSTANDING. ICRA 2017 Krishna Murthy Jatavallabhula, G.V. Sai Krishna, Falak Chhaya, and K. Madhava Krishna.
- C2. CLUSTER, ALLOCATE, COVER: AN EFFICIENT APPROACH FOR MULTI-ROBOT COVERAGE.

 SMC 2015
 Avinash Gautam, Krishna Murthy Jatavallabhula, Gourav Kumar, SP Arjun Ram, Bhargav Jha, and Sudeept Mohan.
- C1. MAXXYT: AN AUTONOMOUS WEARABLE DEVICE FOR REAL-TIME TRACKING OF A WIDE RANGE OF EXERCISES.

 UKSIM 2015

 Danish Pruthi, Ayush Jain, Krishna Murthy Jatavallabhula, Ruppesh Nalwaya, and Puneet Teja.

- J6. FOLLOW ANYTHING: OPEN-SET DETECTION, TRACKING, AND FOLLOWING IN REAL-TIME.

 RAL 2024
 Alaa Maalouf, Ninad Jadhav, Krishna Murthy Jatavallabhula, Makram Chahine, Daniel M. Vogt, Robert J. Wood, Antonio Torralba, Daniela Rus.
- J5. **DIFFERENTIABLE VISUAL COMPUTING FOR INVERSE PROBLEMS AND MACHINE LEARNING**. NATURE MACHINE INTELLIGENCE 2023 Andrew Spielberg, Cengiz Oztireli, Derek Nowrouzezahrai, Fangcheng Zhong, Konstantinos Rematas, **Krishna Murthy Jatavallabhula**, Tzu-Mao Li.
- J4. AnyLoc: Towards Universal Visual Place Recognition.

 RAL 2023

 Nikhil Keetha*, Avneesh Mishra*, Jay Karhade*, Krishna Murthy Jatavallabhula, Sebastian Scherer, Madhava Krishna, Sourav Garg. Project page
- J3. MAPLITE: AUTONOMOUS INTERSECTION NAVIGATION WITHOUT A DETAILED PRIOR MAP (BEST PAPER AWARD).

 RAL 2020
 Teddy Ort, Krishna Murthy Jatavallabhula, Rohan Banerjee, Sai Krishna Gottipati, Dhaivat Bhatt, Igor Gilitschenski, Liam Paull, Daniela Rus. Video Paper
- J2. **DEEP ACTIVE LOCALIZATION**.

 RAL 2019
 Sai Krishna*, Keehong Seo*, Dhaivat Bhatt, Vincent Mai, **Krishna Murthy Jatavallabhula**, Liam Paull.
- J1. FAST: SYNCHRONOUS FRONTIER ALLOCATION FOR SCALABLE ONLINE MULTI-ROBOT TERRAIN COVERAGE.

 JIRS 2017
 Avinash Gautam, Bhargav Jha, Gourav Kumar, Krishna Murthy Jatavallabhula, SP Arjun Ram, and Sudeept Mohan.



- P2. **ALT-PILOT: AUTONOMOUS NAVIGATION WITH LANGUAGE AUGMENTED TOPOMETRIC MAPS**. ARXIV 2023 Mohammad Omama, Pranav Inani*, Pranjal Paul*, Sarat Chandra Yellapragada, **Krishna Murthy Jatavallabhula**[†], Sandeep Chinchali[†], Madhava Krishna[†].
- P1. **KAOLIN: A PYTORCH LIBRARY FOR ACCELERATING 3D DEEP LEARNING RESEARCH**. ARXIV 2019 **Krishna Murthy Jatavallabhula**, Edward Smith, Jean-Francois Lafleche, Clement Fuji Tsang, Artem Rozantsev, Wenzheng Chen, Tommy Xiang, Rev Lebaredian, Sanja Fidler.

Refereed workshop publications

- W7. CONCEPTGRAPHS: OPEN-VOCABULARY 3D SCENE GRAPHS FOR PERCEPTION AND PLANNING. CORL WORKSHOPS 2023
 Qiao Gu*, Ali Kuwajerwala*, Sacha Morin*, Krishna Murthy Jatavallabhula*, Bipasha Sen, Aditya Agarwal, Corban Rivera,
 William Paul, Kirsty Ellis, Rama Chellappa, Chuang Gan, Celso Miguel de Melo, Joshua B. Tenenbaum, Antonio Torralba, Florian Shkurti, Liam Paull. Project Page
- W6. CONCEPTFUSION: OPEN-SET MULTIMODAL 3D MAPPING.

 Krishna Murthy Jatavallabhula, Alihusein Kuwajerwala, Qiao Gu, Mohd Omama, Tao Chen, Shuang Li, Ganesh Iyer, Soroush Saryazdi, Nikhil Keetha, Ayush Tewari, Joshua B. Tenenbaum, Celso Miguel de Melo, Madhava Krishna, Liam Paull, Florian Shkurti, Antonio Torralba.
- W5. ROBUSTPOINTSET: A DATASET FOR BENCHMARKING ROBUSTNESS OF POINT CLOUD CLASSIFIERS. ICLR WORKSHOPS 2021 Saeid Asgari Taghanaki, Jieliang Luo, Ran Zhang, Ye Wang, Pradeep Kumar Jayaraman, Krishna Murthy Jatavallabhula.
- W4. **GRADSLAM:** AUTOMAGICALLY DIFFERENTIABLE SLAM. CVPR WORKSHOPS 2020, RSS WORKSHOPS 2020 Krishna Murthy Jatavallabhula, Ganesh Iyer, Soroush Saryazdi, Liam Paull. Video Project page
- W3. **PROBABILISTIC OBJECT DETECTION: STRENGTHS, WEAKNESSES, OPPORTUNITIES**. ICML WORKSHOPS 2020 Dhaivat Bhatt, Dishank Bansal, Gunshi Gupta, Hanju Lee, **Krishna Murthy Jatavallabhula**, Liam Paull.
- W2. **RECONSTRUCT, RASTERIZE AND BACKPROP: DENSE SHAPE AND POSE ESTIMATION FROM A SINGLE IMAGE.** CVPR WORKSHOPS 2020 Aniket Pokale, Aditya Aggarwal **Krishna Murthy Jatavallabhula**, K. Madhava Krishna.
- W1. **GEOMETRIC CONSISTENCY FOR SELF-SUPERVISED END-TO-END VISUAL ODOMETRY**. CVPR WORKSHOPS 2018 Ganesh lyer*, **Krishna Murthy Jatavallabhula***, Gunshi Gupta, K. Madhava Krishna, and Liam Paull..

PROFESSIONAL SERVICE AND VOLUNTEERING

- 2025 Area chair; CVPR, CoRL
- 2024 OpenReview chair; Conference on Robot Learning (CoRL)

2024	Associate editor; IEEE Robotics and Automation Letters
2022-2025	Associate editor; IROS
2023	Publicity and social media chair; Canadian Al Conference
2017-Present	Reviewer; robotics (ICRA, IROS, RAL, RSS, CoRL), Vision (CVPR, ICCV, ECCV, ACCV, WACV, ICVGIP, CRV), and
	ML (Neurips, ICML, ICLR, AAAI) venues
2020-2021	Student Volunteer, ICML (International Conference on Machine Learning)
2020	Student Volunteer, RSS (Robotics Science and Systems)
2020-2021	Student Volunteer, ICLR (International Conference on Learning Representations)

OUTREACH AND INCLUSION

2022-present	Mentor - Mila mentorship program
2022-present	Mentor - Black in AI academic program
2021	Student member, Mila equity, diversity, and inclusion (EDI) committee (1 of 7 student representatives)
2020	Mentor, Neurips workshop (DiffCVGP)
2020	Diversity and inclusion panel, RSS (Robotics Science and Systems)
2018	Mentor, AI for social good workshop. McGill University.

WORKSHOPS AND SESSIONS CO-ORGANIZED

Jun 2024	Organizer, Multimodalities for 3D scenes (CVPR 2024 workshop)
Dec 2021	Lead organizer (Proposer, Program chair), Physical reasoning and inductive biases for the real world
	(Neurips 2021 workshop) Webpage
Oct 2021	Lead organizer (Proposer, Program chair), Differentiable 3D computer vision and graphics (ICCV 2021 work-
	shop). Webpage
Jul 2021	Program co-chair, Robotics Science and systems pioneers workshop (RSS 2021). Webpage
May 2021	Lead organizer (Proposer, Program chair), Beyond the research paper: Rethinking how we share scientific
	understanding in ML (ICLR 2021 workshop). Webpage
Jan-May 2021	Lead Organizer, Robot learning seminar series: Mila and REAL - Winter 2021. Webpage
Dec 2020	Lead organizer (Proposer, Program chair), Differentiable vision, graphics, and physics applied to machine
	learning (Neurips 2020). Webpage
Sep-Dec 2020	Lead Organizer, Robot learning seminar series: Mila and REAL - Fall 2020. Webpage
Nov 2019	Breakout session organizer, Pan-Canadian SOCMLx.

TALKS

May 23 2025 Jun 17 2024 Jun 7 2024	Invited talk - Neuro AI group meeting, University of Washington Invited keynote - CVPR 2024 Workshop on Scene Graphs and Graph Representation Learning
	Invited talk - Mohamed Bin Zayed University of Artificial Intelligence
Apr 26 2024	Group meeting speaker - SPARK Lab, MIT
Apr 12 2024	Job talk - CS and ECE departments at Johns Hopkins University
Mar 13 2024	Job talk - Meta AI (FAIR)
Mar 1 2024	Invited talk - Microsoft/UMD future leaders in robotics and Al
Feb 27 2024	Invited talk - School of Interactive Computing, Georgia Institute of Technology
Feb 21 2024	Group meeting speaker - Toronto Intelligent Systems Lab - University of Toronto
Feb 20 2024	Group meeting speaker - Robot vision and learning lab - University of Toronto
Nov 17 2023	Guest lecture - Robot Learning Course - University of Illinois Urbana-Champaign
Oct 31 2023	Invited talk - University of Bristol - ML and CV seminar (MaVi)
Oct 17 2023	Invited talk - Boston Dynamics
June 6 2023	Guest lecture - Computer vision course offering
Apr 24 2023	Invited talk - Stanford SVL
Apr 24 2023	Invited talk - Microsoft Mixed Reality Seminars
Mar 23 2023	Invited talk at Cornell Robotics
Feb 23 2023	Invited talk - Katerina Fragkiadaki's group (CMU)
Feb 22 2023	Invited talk - Scene representations group (MIT)
Jan 14 2023	Invited talk - IIT Kanpur robotics club
Dec 16 2022	Guest lecture - ROBGY 6203 - Robot perception - New York University (NYU)
Dec 2 2022	MIT BCS physical reasoning meeting - Physical understanding: An Al perspective

Dec 1 2022	Guest speaker - MIT EECS 6.S980 - Machine learning for inverse graphics (Instructor: Vincent Sitzmann)
Oct 6 2022	Invited talk - MIT Machine Intelligence Research Forum - Differentiable programming for spatial AI
Dec 2021	Invited talk - Talking robotics series
Nov 2021	Guest lecture - Introduction to autonomous vehicles (Duckietown) - Université de Montréal
Oct 2021	Structural and Compositional Learning on 3D Data, ICCV 2021 Workshop - Taskography: Task planning
	over large 3D scene graphs
Aug 2021	Al for Autonomous Driving workshop, IJCAI 2021
July 2021	Tartan SLAM series - Carnegie Mellon University
June 23 2021	Invited talk - ML reading group at the University of Sydney
June 15 2021	Invited talk - Dynamical systems reading group, Mila
Apr 7 2021	Microsoft autonomous systems - gradSim: A differentiable simulation framework
Mar 26 2021	Al in robotics (University of Toronto) - gradSLAM + gradSIM
Feb 23 2021	KUIS AI (Istanbul) - Building differentiable models of the 3D world
Jan 19 2021	MIT Vision seminar - Building differentiable models of the 3D world
Oct 11 2020	IEEE chapter, Indonesia - Deep learning for robot perception
Sep 22 2020	Cornell robotics group - gradSLAM: Dense SLAM meets automatic differentiation
Aug 29 2020	CV Talks, India: Computer vision talks - gradSLAM: Automagically differentiable SLAM
Jul 2020	Robotics Science and Systems pioneers - gradSLAM: Dense SLAM meets automatic differentiation
Jul 2020	Robotics Science and Systems: structured approaches to robot learning workshop - gradSLAM: Automag-
	ically differentiable SLAM
Jun 2020	CVPR: Deep declarative networks workshop - gradSLAM: Automagically differentiable SLAM
Feb 2019	NVIDIA Webinar - 3D deep learning with Kaolin

TEACHING

- 2021 (Instructor) Realistic / Advanced image synthesis (ECSE 446/546) at McGill, Montreal.
- 2021 (Teaching assistant) Representation Learning at Mila and Université de Montréal, with Aaron Courville.
- 2020 (Teaching assistant) **Advanced projects in deep learning** at Mila, with Pierre-Luc Carrier and Journana Ghosn.
- 2017 (Designed and co-taught) **Mobile Robotics and Computer Vision** at IIIT Hyderabad, with Prof. K. Madhava Krishna.
- 2016 (Teaching assistant) **Mobile Robotics** at IIIT Hyderabad, with Prof. K. Madhava Krishna.

STUDENTS MENTORED

A list of students I have closely mentored on a research or technical project. (Criteria: Mentorship lasted 3 months or longer)

- 7 Students at their PhD level or equivalent.
- 30 Students pursuing Masters programs
- 20 Students at their undergraduate level of study (includes UROP students at MIT, visitors / interns at Mila, Université de Montréal and IIIT Hyderabad, India)