Krishna Murthy JATAVALLABHULA
PhD candidate | Mila, Université de Montréal

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 Montréal, QC

Research interests: Interplay of robotics, computer vision, deep learning, computer graphics, and physics (at least three of the five)

WORK

May-Nov 2019	**Deep Learning Research Intern	NVIDIA, TORONTO, Canada** Intern with Prof. Sanja Fidler's group. Interplay of computer vision, deep learning, and computer graphics research. Led the development of Kaolin, a 3D deep learning library for PyTorch.

EDUCATION

2018-Present	PhD. in Computer Science, Université de Montréal, Montréal, Canada.	GPA: 4.15/4.00
2015-2017	MS by research in Computer Science and Engineering, *International Institute of Information Technology, Hyderabad, India*	GPA: 10.00/10.00
2011-2015	M.Sc. (Tech.) Information Systems (Bachelor's degree), *Birla Institute of Science and Technology (BITS), Pilani, India.*	GPA: 6.71/10.00

PRE-PRINTS

GRADSLAM: DENSE SLAM MEETS AUTOMATIC DIFFERENTIATION   UNDER REVIEW

Krishna Murthy J., Ganesh Iyer, Liam Paull Video   Project page

KAOLIN: A PYTORCH LIBRARY FOR ACCELERATING 3D DEEP LEARNING RESEARCH   WHITEPAPER

Krishna Murthy J., Edward Smith, Jean-Francois Lafleche, Clement Fuji Tsang, Artem Rozantsev, Wenzheng Chen, Tommy Xiang, Rev Lebaredian, Sanja Fidler Paper   Code

COPTER: DISENTANGLING OBJECTS IN POINT SETS   UNDER REVIEW

Krishna Murthy J., Ondrej Miksik, Vibhav Vineet, Liam Paull

PUBLICATIONS

INFER: INTERMEDIATE REPRESENTATIONS FOR FUTURE PREDICTION   ACCEPTED TO IROS 2018

Shashank Srikanth, Junaid Ahmed Ansari, Karnik Ram R, Sarthak Sharma, **Krishna Murthy J.**, Madhava Krishna K Paper (PDF)

 Project Page

DEEP ACTIVE LOCALIZATION   ACCEPTED TO RAL

Sai Krishna, Keehong Seo, Dhaivat Bhatt, Vincent Mai, **Krishna Murthy**, Liam Paull Paper (PDF)   Code

GEOMETRIC CONSISTENCY FOR SELF-SUPERVISED END-TO-END VISUAL ODOMETRY   CVPR WORKSHOPS 2018

Ganesh Iyer, **J. Krishna Murthy**, Gunshi Gupta, K. Madhava Krishna, and Liam Paull. Paper (PDF)   Project page

CalibNet: Geometrically-Supervised Extrinsic Calibration using 3D Spatial Transformer Networks IROS 2018
Ganesh Iyer, Karnik Ram R., **J. Krishna Murthy**, K. Madhava Krishna ☑ Paper(PDF) ☑ Project page

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, **J. Krishna Murthy**, K. Madhava Krishna ☑ Paper(PDF) ☑ Project page

Constructing Category-Specific Models for Monocular Object SLAM ICRA 2018
Parv Parkhiya, Rishabh Khawad, **J. Krishna Murthy**, Brojeshwar Bhowmick, K. Madhava Krishna ☑ Paper(PDF)

Beyond Pixels: Leveraging Geometry and Shape Cues for Multi-Object Tracking ICRA 2018
Sarthak Sharma, Junaid Ahmed Ansari, **J. Krishna Murthy**, K. Madhava Krishna ☑ Paper(PDF) ☑ Code

Shape Priors for Real-Time Monocular Object Localization in Dynamic Environments IROS 2017
J. Krishna Murthy, Sarthak Sharma, and K. Madhava Krishna ☑ Paper(PDF)

Reconstructing Vehicles From a Single Image: Shape Priors for Road Scene Understanding ICRA 2017
J. Krishna Murthy, G.V. Sai Krishna, Falak Chhaya, and K. Madhava Krishna ☑ Paper(PDF)

FAST: Synchronous Frontier Allocation for Scalable Online Multi-Robot Terrain Coverage JIRS 2017
Avinash Gautam, Bhargav Jha, Gourav Kumar, **J. Krishna Murthy**, SP Arjun Ram, and Sudeept Mohan

Cluster, Allocate, Cover: An Efficient Approach for Multi-robot Coverage SMC 2015
Avinash Gautam, **J. Krishna Murthy**, Gourav Kumar, SP Arjun Ram, Bhargav Jha, and Sudeept Mohan

Maxxyt: An Autonomous Wearable Device for Real-Time Tracking of a Wide Range of Exercises UKSIM 2015
Danish Pruthi, Ayush Jain, **KrishnaMurthy Jatavallabhula**, Ruppesh Nalwaya, and Puneet Teja

🖥 Experience

Present
January 2018 | PhD student | Mila, Université de Montréal, Canada
> 3D scene understanding
> Autonomous driving
> Robot vision
Computer Vision | Robotics | SLAM | Deep Learning | Computer Graphics

November 2017
June 2015 | Research Assistant | Robotics Research Center, IIIT Hyderabad, India
> Perception for autonomous cars
> Monocular vision, SLAM
Autonomous Driving | Computer Vision | Robotics | Deep Learning | SLAM

December 2016
August 2016 | Teaching Assistant | Mobile Robotics, IIIT Hyderabad, India
Co-taught Mobile Robotics for the Monsoon 2016-2017 semester

May 2015
August 2014 | Research Assistant | INSPIRE lab, BITS Pilani, India
Developed distributed/asynchronous techniques for multi-robot terrain coverage.
Multi-robot systems | Terrain coverage

July 2014 March 2014	Remote Intern, Gymneus Inc., Austria Worked on a prototype fitness device. Designed tracking algorithms that used IMU data to monitor a wide range of strength-training exercises. `Fitness devices` `IMU data analysis`
July 2014 March 2014	Intern | Project e-Attend, BITS Pilani, India Implemented and deployed a face-recognition based attendance system across 3 campus of BITS Pilani. `Face recognition` `Computer vision`
May 2013 July 2012	Captain | Team Robocon, BITS Pilani, India Captained the university team for ABU-Robocon, an Asia-Pacific level robotics competition. `Robot design` `Manipulators` `Electronics` `Sensing devices`

☰ GRADUATE COURSEWORK

Robotics	Mobile robotics (IIIT Hyderabad), Autonomous Vehicles (Université de Montréal), Multi-agent systems (IIIT Hyderabad)
Computer Vision	Computer Vision (IIIT Hyderabad), Image Processing (BITS Pilani), Pattern Recognition (BITS Pilani)
Machine Learning	Machine Learning (IIIT Hyderabad), Theoretical Principles of Deep Learning (Université de Montréal)
Math	Optimization Methods (IIIT Hyderabad)

🎓 HONORS AND AWARDS

2019	**DIRO Excellence Award**. Received the award for the second consecutive year, for academic and research excellence.
2018	**ICRA PhD Forum**. Selected to present my work at the PhD Forum, ICRA 2018, right in the first semester of my PhD. Received generous travel support.
2018	**DIRO Excellence Award**. Received an award of excellence from DIRO, Université de Montréal for academic and research excellence.
2017	**Graduated top of class**. Graduated with a GPA of $10.00/10.00$ during my Masters at IIIT Hyderabad.
2017-2018	**Qualcomm Innovation Fellowship Finalist**. A spin-off of my work on Shape Priors for Road-Scene Understanding has been shortlisted as a finalist for the Qualcomm Innovation Fellowship (QINF), India.
2014	**L K Maheshwari Grant**. Awarded a seed grant for a proposal involving cooperative navigation of a heterogeneous swarm of aerial and ground robots.
2012-2015	**Hackatronics**. Won the annual electronics hack contest for three years in a row. Conducted anually at BITS Pilani, Rajasthan India.

🎓 OUTREACH AND VOLUNTEERING

2018-Present	Reviewer, AAAI (Association for the Advancement of Artificial Intelligence
2019	Program Committee Member, Computer Robot Vision 2019
2019	Reviewer, CVPR (Computer Vision and Pattern Recognition)
2019	Reviewer, ICCV (International Conference on Computer Vision)
2017-Present	Reviewer, IROS (International Conference on Intelligent Robots and Systems)
2017-Present	Reviewer, RAL (Robotics and Automation Letters)
2017-Present	Reviewer, ICRA (International Conference on Robotics and Automation)
2019	Reviewer, ICVGIP (Indian Conference on Computer Vision, Graphics, and Image Processing)
2019	Volunteer, ICRA (International Converence on Robotics and Automation)

🎓 STUDENTS MENTORED

2017-2019	Sarthak Sharma, Masters by Research student at IIIT Hyderabad, India. Recent: Verisk AI.
2017-2019	Junaid Ahmed Ansari, Masters by Research student at IIIT Hyderabad, India.
2018-Present	Shashank Srikanth, Gokul Nair, Swapnil Daga. Undergraduate students IIIT Hyderabad.
2017-2018	Karnik Ram, Gunshi Gupta, Ganesh Iyer. Interns at the Robotics Research Center, IIIT Hyderabad.

🎓 Courses (Co-)Taught

2017	**Mobile Robotics and Computer Vision** at IIIT Hyderabad, with Prof. K. Madhava Krishna.
2016	**Mobile Robotics** at IIIT Hyderabad, with Prof. K. Madhava Krishna.

66 References

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