Krishna Murthy **JATAVALLABHULA**

PhD candidate | Mila, Université de Montréal

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Montréal, QC

Research interests: Interplay of robotics, computer vision, deep learning, and computer graphics (at least two of the four)

Certifications

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**

Publications

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

Pre-prints

INFER: Intermediate representations for FuturE pRediction — Under review

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

Project Page

Deep Active Localization — Under review

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

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

2019 Program Committee Member, Computer Robot Vision 2019
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-Present Sarthak Sharma, Masters by Research student at IIIT Hyderabad, India
2017-Present 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.

References

Liam Paull
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K. Madhava Krishna
Professor and Head, Robotics Research Center
IIIT Hyderabad, India
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