

Chaitanya Mitash

Computer Science Department
Rutgers University, Piscataway 08854
Tel: (703) 772-6747
Email: chaitanya.mitash@cs.rutgers.edu
Webpage: www.cs.rutgers.edu/~cm1074
Github: <https://github.com/cmitash>

EDUCATION

Rutgers University **Sep 2015 - Oct. 2020 (Expected)**
Ph.D Candidate, Computer Science (Robotics, Computer Vision)
Thesis title: "Scalable, Physics-aware 6D Pose Estimation for Robotic Manipulation"
Thesis Advisors: Prof. Abdeslam Boularias and Prof. Kostas Bekris

Rutgers University **Sep. 2015 - Jan. 2019**
Master of Science, Computer Science

Birla Institute of Technology, Mesra, India **June 2008 - May 2012**
Bachelor of Engineering, Computer Science

PUBLICATIONS

C Mitash, KE Bekris, and A Boularias, "A Self-Supervised Learning System For Object Detection Using Physics Simulation And Multi-View Pose Estimation", In Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Vancouver, Canada, September 2017.

C Mitash, A Boularias and KE Bekris, "Improving 6D Pose Estimation Of Objects In Clutter Via Physics-Aware Monte Carlo Tree Search", In Proceedings of IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, May 2018.

C Mitash, A Boularias and KE Bekris, "Robust Object Pose Estimation with Stochastic Congruent Sets", In Proceedings of British Machine Vision Conference (BMVC), Newcastle, England, UK, September 2018.

JP Mercier, **C Mitash**, P Giguere, A Boularias, "Learning Object Localization and 6D Pose Estimation from Simulation and Weakly Labeled Real Images", In Proceedings of IEEE International Conference on Robotics and Automation (ICRA), Montreal, Canada, 2019.

R Shome, W Tang, C Song, **C Mitash**, C Kourtev, J Yu, A Boularias, and K Bekris, "Towards Robust Product Packing with a Minimalistic End-Effector", In Proceedings of IEEE International Conference on Robotics and Automation (ICRA), Montreal, Canada, 2019.

C Mitash, A Boularias and KE Bekris, "Physics-based Scene-level Reasoning for Object Pose Estimation in Clutter", at International Journal of Robotics Research (IJRR) 2019.

C Mitash, W Bowen, KE Bekris and A Boularias, "Scene-level Pose Estimation for Multiple Instances of Densely Packed Objects", In Proceedings of the Conference on Robot Learning (CoRL), Osaka, Japan, October, 2019.

M Alikhani, B Khalid, R Shome, **C Mitash**, K Bekris, M Stone, "That and There: Judging the Intent of Pointing Actions with Robotic Arms", In Proceedings of AAAI Conference on Artificial Intelligence, New York City, USA, February, 2020.

B Wen, **C Mitash**, S Soorian, A Kimmel, A Sintov and K Bekris, "Robust, Occlusion-aware Pose Estimation for Objects Grasped by Adaptive Hands", In Proceedings of IEEE International Conference on Robotics and Automation (ICRA), Paris, France, May, 2020.

WORK EXPERIENCE

Applied Scientist Intern, **May 2019 - August 2019,**
Amazon Robotics, North Reading, MA

- Studied and developed solution for Task-informed robotic grasping of objects placed in a clutter.

Research Assistant, **January 2018 - May 2019,**
Rutgers University & JD-X (JD.com) Silicon Valley Research Center.

- Designed and implemented a perception pipeline for robotic bin picking and packing in cluttered scenarios.

Research Intern, **June 2018 - August 2018,**
Microsoft HoloLens, Redmond, WA

- Studied and developed solution for domain adaptation related challenges in scene understanding for mixed reality applications.

Senior Software Engineer, **April 2014 - July 2015**
Modem Protocol Team
Samsung R&D Institute, Bangalore, India &
Samsung Research, Suwon, South Korea (Feb 2015 - April 2015)

- Developed and optimized components of a new real-time operating system over an LTE modem chipset.
- Developed a simulator for this operating system to perform protocol testing.
- Developed tools to identify memory crash dumps and suggest fixes and optimizations.

R&D Engineer, **August 2012 - March 2014**
Ethernet Protocol Group,
Tejas Networks, Bangalore, India

- Designed and implemented the link aggregation group protocol over a packet switching platform.
- Debugged and solved issues across several software components of the Ethernet switch such as MPLS-TP and IGMP snooping.

Summer Intern, **May 2011 - July 2011**
Texas Instruments, Bangalore, India

- Performed IPv6 conformance testing for TI IP network camera.

TEACHING EXPERIENCE

Graduate Teaching Assistant, **Sep. 2015 - Dec. 2017**
Rutgers University

- Introduction to Artificial Intelligence (Fall 2017, Spring 2017 & Fall 2016).
- Computational Foundations of Robotics (Spring 2017).
- Systems Programming (Spring 2016).
- Operating System Design (Fall 2015).

AWARDS

- Selected to be a part of **R:SS (Robotics Science and Systems) Pioneers** program in 2019 (Amongst 23 from all around the world). Awarded funds for travel and conference registration.
- Finalist for the **Best Paper in Automation Award** at International Conference on Robotics and Automation (ICRA) 2019. 3 papers are selected as finalists.
- Recipient of **Rutgers Graduate Professional Development Award**, 2018.
- Awarded **travel grant** for attending the International Conference on Robotics and Automation (ICRA) 2018 at Brisbane, Australia.

WORKSHOP & TALKS

- Talk and Poster presentation at the **Pioneers workshop**, R:SS 2019, Freiburg, Germany.
- Poster presentation at the **4th International Workshop on Recovering 6D Object Pose**, ECCV 2018, Munich, Germany.
- Short paper presentation at the **Robotics for logistics in warehouses and environments shared with humans**, IROS 2018, Madrid, Spain.
- Short paper presentation at the **Warehouse Picking Automation Workshop**, ICRA 2017, Singapore.
- Poster presentation at **Northeast Robotics Colloquium (NERC)** 2017 (Northeastern University) and 2018 (Rutgers University).
- Talk (2020) and Poster presentations (2017, 2019, 2020) at **Rutgers Computer Science Annual Conference**, Rutgers University, USA.

COMPETITIONS

- Participated in the **Amazon Picking Challenge, 2016** as a part of the Rutgers team. My contribution was in developing software for object pose estimation and shelf calibration.
- Qualified as Asia Finalists in the in the **ACM-International Collegiate Programming Contest (ICPC), 2010**. Final competition ranking was 37.
- Achieved a national rank of 4552 (99.5 percentile) in the **All India Engineering Entrance Examination, 2008**.

PEER REVIEW

- Meta-reviewer, Program Committee member for R:SS Pioneers 2020.
- Reviewer, IROS 2017, 2018, 2019, 2020.
- Reviewer, ICRA 2018, 2019.
- Reviewer, RA-L 2018, 2020.
- Reviewer, R:SS 2020.
- Reviewer, WAFR 2020.
- Reviewer, NeurIPS 2019.
- Reviewer, CVPR 2019.
- Reviewer, CoRL 2019.
- Reviewer, IEEE Access 2019.

**RELEVANT
SKILLS**

- **Languages:** C++, C, Python, Matlab.
- **Tools:** ROS, Point Cloud Library, OpenCV, PyTorch.
- **Hardware:** Hands-on experience with robotic platforms (Yaskawa Motoman dual-arm manipulator & Kuka iiwa robot), RGB-D sensors (Intel RealSense & Microsoft Kinect).

**GRADUATE
COURSES**

Computer Vision, Computational Geometry, Pattern Recognition, Robot Learning, Robot Manipulation, Advanced Data Structures(Algorithm I), Streaming algorithms (Algorithm II), Introduction to Artificial Intelligence. (CGPA: 3.97/4.00)