Nishanth Jay Kumar

Personal Website: nishanthjkumar.com
Email: njk@csail.mit.edu
LinkedIn: nishanth-kumar
Google Scholar: Nishanth Kumar
GitHub: github.com/NishanthJKumar

Education

Massachusetts Institute of Technology — Cambridge, MA
Doctor of Philosophy in Electrical Engineering and Computer Science — 2021 –2026 (expected)

- Selected Coursework: Robotic Manipulation
- Activities: Graduate Application Assistance Program (GAAP) mentor

Brown University — Providence, RI
Sc.B. in Computer Engineering with Honors, GPA: 3.96/4.00 — 2017 –2021

- Named 'Outstanding Student in Computer Engineering' upon Graduation
- Activities: Brown Space Engineering, Brown STEAM Club, Brown CS Meta-Undergrad Research Assistant (MURA)

The Indian Public School — Coimbatore, India
IB Diploma Programme, Final Score: 45/45 — 2015–2016

- Valedictorian, first student in school history to achieve a perfect IB score
- Activities: Robotics Team, MUN Team, School Newsletter, Basketball Team

Academic Experience

MIT Learning and Intelligent Systems Lab — Cambridge, MA
Graduate Research Assistant — 2021 - Present

- Advised by Professors Leslie Kaelbling and Tomás Lozano-Pérez within the LIS group
- Research topics include Neurosymbolic methods, Exploration, Reinforcement Learning, Task and Motion Planning, and Imitation Learning, among others

Brown University Department of Computer Science — Providence, RI
Undergraduate Research Assistant — 2017 - 2021

- Worked with Professors Stefanie Tellex, George Konidaris and Michael Littman within the bigAI initiative
- Research topics included Imitation Learning, Reinforcement Learning, Classical Planning, Model-Based Reasoning, Planning under Uncertainty, and Mixed Reality, among others

Brown University Department of Computer Science — Providence, RI
Meta Undergraduate Research Assistant (MURA) — 2020 - 2021

- Responsible for cultivating and promoting Undergraduate Research within the Brown CS Department
- Held "Research Office Hours", co-ordinate with faculty to host educational events and increase research opportunities for undergrads

Industry Experience

Vicarious AI — Remote
Research Intern — May - August 2021

- Research Project on building a toolkit for Probabilistic Graphical Models (PGM's) with Stannis Zhou and Miguel Lazaro-Gredilla
- First-author journal publication in preparation. Open-source project code release can be found here [link]. Other project details under NDA

Uber Advanced Technologies Group Remote
Summer Research Intern May - August 2020

- Research Project on Active Learning under Prof. Raquel Urtasun
- First-author conference publication accepted to the Conference on Robot Learning (CoRL) 2021.

Paragon.school Providence, RI
Co-Founder February 2020 - Present

- Paragon.school is a mentorship and college-consulting company for high-performance high school students

Teaching

- **Head Teaching Assistant**, Brown CS Fall 2019
  Learning and Sequential Decision Making [Grad Level] (CSCI 2951-F)
- **Teaching Assistant** at Brown School of Engineering Fall 2018
  Honors Introduction to Engineering (ENGN 0031)

Scholarships and Awards

- NSF Graduate Research Fellowship 2021
- Berkeley Fellowship (declined) 2021
- Brown Outstanding Computer Engineering Senior Award 2021
- CRA Outstanding Undergraduate Researcher Award Finalist 2021
- Barry M. Goldwater Scholarship 2020
- Member of Tau Beta Pi Engineering Honors Society 2020
- Heidelberg Laureate 2020
- CRA Outstanding Undergraduate Researcher Award Honorable Mention 2020
- 'Best Plenary Presenter', Ivy-League Undergrad Research Symposium (ILURS) 2019
- Undergraduate Teaching and Research Award, Brown University 2019
- Hack@Brown "Best Hardware Hack" 2018
- YHack "Best Finance Hack" 2017
- Google Global Science Fair Regional Finalist 2015
- FIRST Tech Challenge World Championships, Special Judges' "Enabler" Award 2015

Academic Publications

[1] S. Segal*, **N. Kumar***, S. Casas, W. Zeng, M. Ren, J. Wang, and R. Urtasun, "Just label what you need: Fine-grained active selection for p&p through partially labeled scenes", in *5th Annual Conference on Robot Learning*, 2021. [Online]. Available: https://openreview.net/forum?id=xQ8rr3-zpiH.

[2] **N. Kumar***, M. Fishman*, N. Danas, M. Littman, S. Tellex, and G. Konidaris, *Task scoping: Building goal-specific abstractions for planning in complex domains*, 2020. arXiv: 2010.08869 [cs.AI].

[3] **N. Kumar***, J. Chang*, S. Hastings, A. Gokaslan, D. Romeres, D. Jha, D. Nikovski, G. Konidaris, and S. Tellex, *Learning deep parameterized skills from demonstration for re-targetable visuomotor control*, 2019. arXiv: 2010.08869.

[4] **N. Kumar***, E. Rosen*, and S. Tellex, "Knowledge acquisition for robots through mixed reality head-mounted displays", 2018. [Online]. Available: http://cs.brown.edu/people/er35/publications/knowledge.pdf.

[5] A. Wandzel, Y. Oh, M. Fishman, **N. Kumar**, W. L. LS, and S. Tellex, "Multi-object search using object-oriented pomdps", in *International Conference on Robotics and Automation (ICRA)*, IEEE, 2019, pp. 7194–7200. [Online]. Available: https://par.nsf.gov/servlets/purl/10149768.

[6] **N. Kumar***, M. Fishman, N. Danas, S. Tellex, M. Littman, and G. Konidaris, "Task scoping for efficient planning in open worlds (student abstract)", in *Proceedings of the AAAI Conference on Artificial Intelligence*, vol. 34, 2020, pp. 13 845–13 846. [Online]. Available: https://ojs.aaai.org//index.php/AAAI/article/view/7195.

[7] E. Rosen, **N. Kumar**, N. Gopalan, D. Ullman, G. Konidaris, and S. Tellex, "Building plannable representations with mixed reality", in *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2020. [Online]. Available: https://ras.papercept.net/proceedings/IROS20/1772.pdf.