

SONIA RAYCHAUDHURI

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I am a PhD candidate in Computer Science at the [3dlg-hcvc lab](#) and [GrUVi Lab](#), in [Simon Fraser University](#), advised by [Dr. Angel Chang](#). I work to build Embodied AI agents capable of navigating in 3D indoor environments and are required to find one or more target objects, which are often described using natural language instructions.

I interned at the Boston Dynamics AI Institute in Spring 2024. Previously I graduated with a B.E. degree in Engineering from [IEST](#) and thereafter worked with TCS and Ericsson as a Software Engineer, before deciding to pursue research in AI. Some of my other interests include reading books, going for long walks and dancing.

Keywords	embodied ai, visual navigation, object navigation, multi-object navigation, vision and language navigation, reinforcement learning, computer vision, robotic vision, robotic navigation
Publications	<p><u>Language-driven spatially-aware Multi-Object Navigation</u> S. Raychaudhuri, E. Cancelli, T. Campari, L. Ballan, M. Savva, A. Chang. (in progress)</p> <p><u>Semantic Maps in Indoor Embodied AI Navigation - A Review and Analysis</u> S. Raychaudhuri, A. X. Chang (in progress)</p> <p><u>NL-SLAM for OC-VLN: Natural Language Grounded SLAM for Object-Centric Vision-Language Navigation</u> S. Raychaudhuri, D. Ta, K. Ashton, A. X. Chang, J. Wang, B. Bucher (<i>under submission</i>)</p> <p><u>R3DS: Reality-linked 3D Scenes for Panoramic Scene Understanding</u> Q. Wu, S. Raychaudhuri, D. Ritchie, M. Savva, A. Chang ECCV 2024 [project]</p> <p><u>MOPA: Modular Object Navigation with PointGoal Agents.</u> S. Raychaudhuri, T. Campari, U. Jain, M. Savva, A. Chang. WACV 2024 [project] [paper]</p> <p><u>Retrospectives on the Embodied AI Workshop.</u> M. Deitke, D. Batra, Y. Bisk, T. Campari, A. Chang, D. Chaplot, et al. [arXiv 2022]</p> <p><u>Language-Aligned Waypoint (LAW) Supervision for Vision-and-Language Navigation in Continuous Environments.</u> S. Raychaudhuri, S. Wani, S. Patel, U. Jain, A. Chang. EMNLP 2021 [project]</p>

Motion Annotation Programs: A Scalable Approach to Annotating Kinematic Articulations in Large 3D Shape Collections.

X. Xu, D. Charatan, S. Raychaudhuri, H. Jiang, M. Heitmann, V. Kim, S. Chaudhuri, M. Savva, A. Chang, and D. Ritchie.
3DV 2020 [[project](#)]

Academic
Service / Peer
Review

Organizing Workshops

Co-host of [MultiON challenge](#) for [Embodied AI Workshop](#) at CVPR 2022, 2023, 2024

Reviewing for International Conferences

ICRA, IROS, IEEE Robotics and Automation Letters (RA-L), CVPR, ICCV, ACL ARR, CRV, WACV, TPAMI, SIGGRAPH, SIGGRAPH Asia, IJCV.

Organizing Student-led Groups

- Mentoring Graduate students as part of the Women in Computer Science (WiCS) at SFU
- Mentoring undergrad research students at SFU
- Organizing reading groups at SFU

Awards /
Recognition

- Awarded Outstanding TA Award by the SFU School of Computing Science for 2022
- Amii AI Week Talent Bursary Recipient, 2022 [[webpage](#)]
- Selected for CRA-WP Grad Cohort for Women, 2022 [[webpage](#)]
- Graduate Fellowship, SFU, 2022
- Selected for CRA-WP Grad Cohort for Women, 2021 [[webpage](#)]
- Helmut & Hugo Eppich Family Graduate Scholarship, SFU, 2021
- Computing Science Graduate Fellowship, SFU, 2021
- Graduate Fellowship, SFU, 2021
- Graduate Fellowship, SFU, 2019

Teaching
Experience

- Graduate Teaching Assistant, Natural Language Processing, Fall 2021
- Graduate Teaching Assistant, Grounded Natural Language Understanding, Spring 2021
- Graduate Teaching Assistant, Natural Language Processing course, Fall 2020

Education

- Ph.D., Computer Science, Simon Fraser University, Canada (2020-present)
- Bachelor of Engineering, Information Technology, IIST, India (2003-2007)

Industry
Experience

- Boston Dynamics AI Institute, Research Intern (Jan-Jun 2024)
- Ericsson India Global Services Pvt. Ltd, Senior Software Engineer (2011–2019)
- Tata Consultancy Services Pvt. Ltd., India, Software Engineer (2007–2011)