

Education

KAIST, Republic of Korea

Masters, Graduate School of AI

2020-2022

CGPA: 4.05/4.3

- Thesis Topic: [Task agnostic and post-hoc unseen distribution detection](#).
- Advisor: [Professor Edward Choi](#).

Panjab University, Chandigarh, India

Bachelor of Engineering With Honours, Information Technology

2015-2019

CGPA: 9.24/10

- Third position** in B.E. program in Information Technology Department (120 students).

Research Experience

Google Research

Predoctoral Researcher

Sept 2022 - Present

- Mentors: [Dr. Gaurav Aggarwal](#), [Alok Talekar](#), [Ishan Deshpande](#)
- Group: [Mixed-mode user understanding \(M2U2\)](#) and [Anthrokrishi](#) Groups.
- Conducting research on **one-shot segmentation** without training models on any segmentation related tasks.
- Working on and Leading the **Agricultural Landscape Understanding** project. The project was highlighted in Google For India 2022 [[video](#), [G4I blog](#), [dedicated project blog](#)], Google I/O 2023[[demo](#)], Google I/O Connect India 2023 [[video](#)].

Brown University

Summer Intern

July 2020 - Sept 2020

- Mentor: [Professor Srinath Sridhar](#) (Brown University) and [Professor Leonidas Guibas](#) (Stanford University)
- Conducted research in 3D computer vision and machine learning.

Indian Institute of Technology Hyderabad, India

Visiting Researcher

Jan 2019 - June 2020

- Mentor: [Professor Vineeth N Balasubramanian](#)
- Conducted research in Vision and Language applications and introduced a new task, **ViQAR: Visual on Answering and Reasoning**, which focuses on automatic generation of the answer, and of a rationale, given a visual query.

Celestini Project India

Research Intern

June 2018 - Aug 2018

- Mentors: [Dr. Aakanksha Chowdhery](#) (Google Brain and Tensorflow) and [Prof. Brejesh Lall](#) (IIT Delhi).
- Developed a temporal forecasting solution based on the historical data reported by Central Pollution Control board to predict the real-time and fine-grained air quality information in five locations of Delhi.
- [Blog post](#), [Indian press](#) and [Demo youtube video](#).

Variance.AI

Summer Intern

June 2017 - Aug 2017

- Worked on developing a method to determine the breathing rate and pulse rate of a person using video as a source by making use of **Eulerian Video Magnification Algorithm**.

Publications

Conference Publications

- Radhika Dua, Seongjun Yang, Yixuan Li, Edward Choi. TAPUDD: Task Agnostic and Post-hoc Unseen Distribution Detection, **WACV 2023**. [\[paper\]](#)
- Jeonghoon Park*, Jimin Hong*, Radhika Dua*, Daehoon Gwak, Yixuan Li, Jaegul Choo, Edward Choi. Natural Attribute-based Shift Detection, *Under Review*. [\[paper\]](#)
- Seongjun Yang, Hyeonji Hwang, Daeyoung Kim, Radhika Dua, Jongyeup Kim, Eunho Yang, Edward Choi. Towards a Practical Utility of Federated Learning in the Medical Domain, **Conference on Health, Inference, and Learning (CHIL) 2023**. [\[paper\]](#)
- Rahul Sajnani, Adrien Poulenard, Jivitesh Jain, Radhika Dua, Leonidas Guibas, Srinath Sridhar. ConDor: Self-Supervised Canonicalization of 3D Pose for Partial Shapes, **CVPR 2022**. [\[paper\]](#), [website](#)
- Taehee Kim, ChaeHun Park, Jimin Hong, Radhika Dua, Edward Choi, Jaegul Choo. Reweighting Strategy based on Synthetic Data Identification for Sentence Similarity Comparison, **COLING 2022**. [\[paper\]](#)
- Divyam Madaan*, Radhika Dua*, Prerana Mukherjee, Brejesh Lall. VayuAnukulani: Adaptive Memory Networks for Air Pollution Forecasting, **GlobalSIP2019**. [\[code\]](#), [paper](#), [slides](#)

Workshops

- Radhika Dua, Seongjun Yang, Yixuan Li, Edward Choi. TAPUDD: Task Agnostic and Post-hoc Unseen Distribution Detection, **ARROW Workshop, ECCV 2022**. [\[paper\]](#)
- Radhika Dua, Jiyoung Lee, Joon-myung Kwon, Edward Choi. Automatic Detection of Noisy Electrocardiogram Signals, **International Workshop on Pattern Recognition in Healthcare Analytics, ICPR 2022**. [\[paper\]](#)
- Radhika Dua*, Sai Srinivas*, Vineeth N Balasubramanian. Beyond VQA: Generating Multi-word Answer and Rationale to Visual Questions, **MULA Workshop, CVPR 2021**. [\[paper\]](#), [video](#), [slides](#), [poster](#)

AI for Social Good

- Radhika Dua, Alex Wilson, Shubhika Garg, Gaurav Singh, Alok Talekar, Gaurav Aggarwal, Gopi Prashanth Ramineni, Bindiya Kurlle. Agricultural Landscape Understanding At Scale, **American Geophysical Union, AGU 2023**. [\[Oral presentation\]](#) [\[paper\]](#)
- Alok Talekar, Aravindan Krishnan, Radhika Dua, Alex Wilson, Gopi Prashanth Ramineni, Arnab Basu. Policy Driven Growth In Water Infrastructure By SmallHolder Farmers, **American Geophysical Union, AGU 2023**. [\[Lightening presentation\]](#) [\[paper\]](#)
- Ishan Deshpande, Bhartendu Pandey, Radhika Dua, Amandeep Kaur, Alok Talekar, Anu Ramaswami. AgroForestry in India - Towards Country Wide Finescale Carbon Accounting, **American Geophysical Union, AGU 2023**. [\[Poster presentation\]](#) [\[paper\]](#)
- Karan Choudhary, Chintapalli Srirama Srirama Murthy, Sunil Kumar Dubey, Radhika Dua, Dinesh Tewari, Alok Talekar. Crop analytics at field parcel level using multi-resolution satellite images, segmentation and mapping techniques: Towards a transformative solution for crop surveys, **American Geophysical Union, AGU 2023**. [\[Poster presentation\]](#) [\[paper\]](#)
- Chintapalli Srirama Srirama Murthy, Sunil Kumar Dubey, Karan Choudhary, Radhika Dua, Ishan Deshpande, Alok Talekar. Mapping tree cover over farm parcels and assessing the scope for agro-forestry development using high resolution satellite images and segmentation techniques, **American Geophysical Union, AGU 2023**. [\[Poster presentation\]](#) [\[paper\]](#)

* denotes equal contribution

Awards and Scholarships

- Recipient of the **KAIST International Students Scholarship** from 2020 to 2022.
- Recipient of the prestigious **Grace Hopper Celebration India (GHCI) 2018 Student Scholarship** given to 250 deserving women students from computing, engineering, and IT backgrounds.
- Awarded **Second Prize in Celestini Project India** by **Marconi Society and Google** for our project on Air Pollution Prediction. **Celestini Project India 2018** is a very competitive internship program where only 8 out of 100 extremely talented applicants are selected.
- Recognized as **India's 91 Brightest Engineering Student** by Economic Times Campus Stars 2018-19. It was a four-phase program in which 91 students out of total 37,000 students were selected.
- **Hackathons:** Won hackathons like **Hack In The North 2017**-The largest student hackathon in India (Prize: **Second**), **Hack Infinity 2017** (Prize: **Second**) and **India Hacks 2017** by Hacker Earth (Prize: **Sixth** out of 35000).

Teaching Experience

- Teaching Assistant for **Scientific Writing (CC500)** course and **Graduate English Presentations (HSS583)** course at **KAIST** instructed by **Prof. Mik Fanguy**.
- Teaching Assistant for **Deep Learning for Computer Vision** offered by **Dr. Vineeth N Balasubramanian** on **NPTEL** (National Programme on Technology Enhanced Learning) platform.
- Teaching Assistant for **Deep Learning for Computer Vision (CS5370)** course and **Advanced Topics in Machine Learning (CS6360)** course at **IIT Hyderabad** instructed by **Dr. Vineeth N Balasubramanian**.

Talks and Sessions

- Gave a **keynote talk** on *Towards Sustainable Agriculture prioritizing Global South using Machine Learning* in **IISC open day 2023**.
- Speaker at **codechef campus chapter UIET** (2016-17) where I took programming sessions for junior year students.
- Speaker at **Software Freedom Day 2017**, Panjab University, which aims to motivate the youth to contribute to open source software and pursue an education in STEM fields.

Professional Activities

- Volunteer at the **Google Networking Event** and **Google Booth** during **ICCV 2023**.
- Reviewer / Subreviewer for **AAAI 2024**, **ICCV 2023**, **ECCV 2022**, **CVPR 2022**, and **SDM 2020** (SIAM International Conference on Data Mining (SDM20)).
- Reviewer for **Grace Hopper Celebration (GHC) 2020** Scholarship.
- Volunteer for virtual conferences: **ICML 2021**, **ICML 2020**, and **ACL 2020**.
- Mentor at **Climate Tech Startup Meet 2023** by Google.
- Poster Mentor at **Women in Machine Learning (WiML)** workshop, **NeurIPS '20**.
- Mentor at **Hacksprint** version2 Hackathon at Panjab University, Chandigarh.
- **Fellow Campus Ambassador** in **Campus Geek Ambassador** program by **GeeksforGeeks** (2017-18).

Programming Skills

- **Languages:** Python, C++
- **Deep Learning Frameworks:** Pytorch, Tensorflow
- **Libraries and tools:** \LaTeX , Git, NumPy, Scikit-learn, Matplotlib, Pandas