

Geetika Vadali

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RESEARCH INTERESTS

Deep Learning, Reinforcement Learning, Computer Vision, Computational Biology, Computational Neuroscience, AI for Healthcare, AI for Science, Game Theory

EDUCATION

- **Indira Gandhi Delhi Technical University for Women (IGDTUW)** Delhi, India
BTech in Computer Science and Engineering with Artificial Intelligence *Aug. 2021 – May 2025*
CGPA: **9.18/10**
- **Central Board of Secondary Education** Delhi, India
Senior Secondary - 94% , Secondary - 98.2% *June 2021 , June 2019*

RESEARCH EXPERIENCE

- **Mitacs Globalink Research Intern:** Northern Institute for Deep Learning in Ultrasound Lab, University of Alberta, Edmonton, Canada
May 2024 - August 2024
 - Research Internship supervisor - Prof. Abhilash R. Hareendranathan
 - Trained and integrated a **Deep Reinforcement Learning (DRL)** agent to an existing classifier system that facilitates earlier point-of-care diagnosis for rotator cuff tear. Was responsible for the **reward function formulation and training**. Combined concepts of video summarization, RL and medical data analysis.
 - Selected among 50+ interns to present my internship work as a Three-Minute Thesis for an interdisciplinary audience at Research Symposium, University of Alberta.
- **Undergraduate Researcher:** Murty Lab, Georgia Institute of Technology
December 2023 - April 2024
 - Modelled experiments to see effects of **adversarial perturbations** on an image throughout its journey inside a ResNet50 and controlling its activation by modifying the degree of perturbations. Work in collaboration with Prof. N Apurva Ratan Murty. [Link to code](#)
- **Undergraduate Researcher:** Xu Lab, Carnegie Mellon University
September 2023 - January 2024
 - Designed a python script to isolate and segment individual biological cells from given pigmented slide images. In collaboration with Dr. Ali Dabouei. [Link to code](#)

PUBLICATIONS

- **Shoulder Rotator Cuff Tear Detection from Ultrasound Videos using Deep Reinforcement Learning:** April 2025
Shrimanti Ghosh*, **Geetika Vadali***, Ayush Singh, Yuyue Zhou, Banafshe Felfeliyan, Assefa Wahd, Jessica Knight, Mahesh R. Panicker, Jacob L. Jaremko, Abhilash R. Hareendranathan
Accepted at International Symposium on Biomedical Imaging (ISBI) 2025, Houston TX, United States
- **Video Summarization and Fracture Detection in Pediatric Wrist Ultrasound Using Deep Reinforcement Learning:**
Shrimanti Ghosh, **Geetika Vadali**, Yuyue Zhou, Ayush Singh, Jessica Knight, Christopher Keen, Mahesh R. Panicker, Abhilash R. Hareendranathan, Jacob Jaremko
Accepted at IEEE Engineering in Medicine and Biology (EMBC) 2025, Copenhagen, Denmark
- **Spatio-Temporal Crime Detection Using Surveillance Videos in a Federated Setting:**
Nikita Shrivastava*, Anushka Garg*, **Geetika Vadali***, Ritika Kumari
Accepted at International Conference on Computer Vision and Robotics (CVR) 2025, NIT Goa, India [Paper](#)
- **Convergence to Nash Equilibrium: A Comparative Study of Rock-Paper-Scissors Algorithms:** June 2023
Geetika Vadali*, M Deekshitha Reddy*, Ritu Rani, Poonam Bansal
IEEE International Conference on Computing, Communication, and Intelligent Systems 2023, Noida, India [Code Paper](#)

- **Predicting Optimal Startup Exit Strategies with Ensemble Learning for Venture Capitalists:** Dec 2023
M Deekshitha Reddy, **Geetika Vadali**, Garima Jaiswal, Ritu Rani, and Amita Dev
Springer International Conference on Artificial Intelligence and Speech Technology 2023, IGDTUW, India. Sponsored by DST Curie-AI Project, Government of India and won the best paper award at Springer-AIST'23 from 300+ submissions.
[Paper](#)

ACCOMPLISHMENTS

- **Winner in Wipro Climate Challenge'22** November 2022 - February 2023
Wipro and Climate Collective *Received grant money and incubation support*
 - **Proposed Solution:** : Our solution assures a food storage facility of 'organisation in their stock' and 'optimisation in their flow' using **AI and stock data analytics**. Won the **Top 5 across 1,175 teams** who applied and were invited to the Wipro Earthian Awards, Bangalore. Awarded grant prize of around 1200USD.

TECHNICAL PROFESS

- **Technical Languages:** Python, Java, R, SQL, HTML, CSS
- **Frameworks and Tools:** Tensorflow, PyTorch, Keras, Microsoft Office, Bootstrap, Pandas, Numpy, Tableau, Matplotlib, Scikit-Learn, Sympy, CI/CD, Bash Scripting
- **Courses Taken:** Database Management Systems, Operating Systems, Data Structures and Algorithms, Optimization Techniques, Numerical Methods, Computer Networks, Compiler Design, Digital Image Processing
- **Conferences and Summer Schools Attended:** 9th Annual Conference of Cognitive Science, IIT Delhi; Summer School on Federated Learning, IIIT Delhi; Upper Bound Conference, University of Alberta, Amii, Presented at IC-IMPACTS Legacy Conference 2024; IISc Reinforcement Learning Workshop 2025

LEADERSHIP AND VOLUNTEERING EXPERIENCE

- **Founding Member of Arc - Data Science Club of IGDTUW:** Founding Director of Operations overlooking the Management, Design, Content and Research Teams. Organised and executed datathons, technical talks and community building activities.
- **Desh Ke Mentor (Mentors of the Nation) program:** Mentored 3 Delhi Government high-school girls for further education in STEM.
- **Event Management Core at Association for Computing Machinery-IGDTUW Student Chapter:** Conducted technical and outreach events in online and offline mode. ACM Society member for 2 years.

EXTRACURRICULARS

- **Fine Arts:** With over 15 years of professional training, diploma holder from Pracheen Kala Kendra, Chandigarh
- **Debating:** Active member in the College Debating Club. Represented university at 3 national level Asian Parliamentary Debates. Semifinalist in IIT Delhi APD 2023.

REFERENCES

- **Prof. Abhilash RH:** Assistant Professor, Department of Radiology, University of Alberta, Canada
hareendr@ualberta.ca
- **Prof. Poonam Bansal:** HoD, Department of AI and DS, IGDTUW, New Delhi, India
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- **Prof. Rishabh Kaushal:** Assistant Professor, Department of Information Technology, IGDTUW, New Delhi
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