

Abhishek Jaiswal

Ph.D. Candidate, Dept. of Computer Science and Engineering
Indian Institute of Technology Kanpur (CPI 9.2/10 | 2019 - Present)

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PUBLICATION

Machine Learning for Healthcare (MLHC) '24, Canada

Benchmarking Reliability of Deep Learning Models for Pathological Gait Classification

- Identify gaps inhibiting translation of gait classification to applications
- Proposed a baseline for robust classification across multiple datasets
- Discover insights to guide clinical analysis of pathological gait

CogSci '24, Netherlands

Learning to Play Video Games with Intuitive Physics Priors

- Modular Integration of human thought process in game playing
- Using Intuitive Physics Priors with RL for human-like generalization

ACM Recsys '23, Singapore

Using Learnable Physics for Real-Time Exercise Form Recommendations

- Detect Exercise Pose Incongruities in real-time
- Propose Exercise-specific recommendations as feedback

EXPERIENCE

Research Scholar - Rice University, Houston, United States

Sep 2024 - Dec 2024

- Developing an AI Coach for human task execution
- Modeling human skill levels for the AI teacher
- Created Unity Traffic Simulator for data collection

Internship - VueMotion, Australia — Remote

Jan 2024 - May 2024

- Worked on Vision-based athlete performance analysis
- Developed foot contact estimation methods to track motion

Samsung Research Institute, Delhi — Engineer

July 2018 - July 2019

- Designed Deep RL prototype for Adaptive Bitrate Switching
- Best projects award, commercialized in 2020 TVs

SKILLS

Tools: Unity, V-rep

Frameworks: Pytorch, Keras, Pygame

ML Tools: Graph Nets, RL, Feature Analysis, Time Series Modeling

WORKSHOPS

ACM ARCS 2024 - Poster

CSE Research Day 2024 - Poster

Institute Research Symposium (IRS) 2024 - Poster

National Youth Conference On Indian Knowledge Systems 2023 - Poster

AAAI Workshop on User-Centric AI for Assistance in Home Taks 2023 - Poster

Neuromatch Academy for DL

AWARDS

Mehta-Rice Scholarship 2024

ACM ARCS Travel Grant 2024

ACM ICPC Competition Onsite Rounds 2018 and 2019

Samsung Employee of the Month, December 2020

RELEVANT PROJECTS

Intention Inference, IIT Kanpur — *Ph.D*

Jan 2024 - Present

- Supervising students for Sports Dataset creation for sports coaching
- Developing Player Intent inference pipeline from Posture videos

Isometric Pose Correction, IIT Kanpur — *Ph.D*

Dec 2023 - Present

- Developing dataset with correct and incorrect forms of isometric yoga postures
- Using Graph Network based features analysis for classification

Indian Sign Language Analysis, IIT Kanpur — *Ph.D*

Feb 2024 - Present

- Developing Automatic Action-to-text and Text-to-Action translators for patients with communication disorders
- Using Video Input with Human Modeling for text output

Mirror Therapy for Stroke Spasticity, IIIT Hyderabad

May 2016 - July 2016

- Developed VR Unity game using Oculus Rift
- Immersive volleyball was used with children for rehab exercise

Autonomous Maneuvering, IIT Patna — Senior Year

Aug 2017 - May 2018

- Simulated V-Rep agents with DQN for obstacle avoidance
- Developed an Arduino based Hardware for the model

SimPhy (Physics Simulation Game), IIT Patna

Jan 2016 - April 2016

- Used Physics with Serious Gaming for Academic Learning
- Developed new features like image buttons and endless roads

RESPONSIBILITIES

Jigyasa Festival IITK - Overall Coordinator 2022

IITK CSE Academic Student Mentor 2021-2023

Contingent Leader IIT Patna - Inter IIT Tech Meet 2018

Adhyayan Utsav - Coordinator UBA Cell 2017

RELEVANT COURSES

Algorithms and Data Structures, Deep Learning, Human-Computer Interaction, Reinforcement Learning

EDUCATION

Ph.D. - Indian Institute of Technology Kanpur 2019 - Present (CPI 9.2/10)

B.Tech - Indian Institute of Technology Patna 2014 - 2018 (CPI 8.8/10)

POSTER PRESENTATIONS

Institute Research Symposium, IIT Kanpur(2023), CSE Research Day (2024), IIT Kanpur

EXTRACURRICULAR INTERESTS

Reading - Indian Philosophy, Traveling