Madhavaram Vivek Vardhan

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Vivek Madhavaram vivekmadhavaram

Interests

My Interest is in the research related to Geometric Deep Learning, 3D Computer Vision, Human Scene Interaction.

Education

Ph.D. Jan 2025 – Present

- **International Institute of Information Technology, Hyderabad**, Computer Science
- Advisor: Dr. Charu Sharma

Masters by Research Jul 2022 – Dec 2024

- **International Institute of Information Technology, Hyderabad**, Computer Science
- Advisor: Dr. Charu Sharma
- GPA: 9.17/10

Bachelor of Technology Aug 2015 – May 20219

- **VNR Vignana Jyothi Institute of Engineering and Technology, Hyderabad**, Computer Science
- GPA: 9.22/10

Experience

Machine Learning Lab, Research Fellow — Hyderabad, India, Jan 2023 – Present

- Being advised by **Dr. Charu Sharma** at International Institute of Information Technology, Hyderabad
- Working on 3D Computer Vision tasks such as scene editing, human scene interaction.

Hexagon Capability Center, Senior Software Engineer — Hyderabad, India, June 2019 – Jul 2022

- Requirement Analysis & Design – Gathered requirements, analyzed them, and created design documents.
- Development & Automation – Built UI, implemented logic, automated processes, and developed Python tools.
- Testing & Quality Assurance – Created test plans, performed testing, and documented processes.
- Team & Customer Engagement – Managed a team, trained users, and created marketing materials.
- Competitive Analysis & 3D Modeling – Conducted competitor research and designed 3D models for demonstrations.

Publications

Towards a Training Free Approach for 3D Scene Editing WACV 2025

Vivek Madhavaram, Shivangana Rawat, Chaitanya Devaguptapu, Charu Sharma, Manohar Kaul
Towards a Training Free Approach for 3D Scene Editing

VIZOR: Viewpoint-Invariant Zero-shot Scene-graph for Reasoning in 3D Scenes under review

Vivek Madhavaram, Vartika Sengar, Arkadipta De, Charu Sharma

MOGRAS: Human Motion with Grasping in 3D Scenes under review

Kunal Bhosikar, Siddharth Katageri, ***Vivek Madhavaram***, Kai Han, Charu Sharma

STUDENT PERFORMANCE ANALYSIS FOR OUTCOME BASED EDUCATION INT-JECSE, 2022

P. SNIGDHA RAO, S. NAGINI, Devulapalli Sudheer, V. S. S. BAPIRAJ ***Vivek Madhavaram***, M. HARSHITHA

Projects

VISOR: Viewpoint-Invariant Scene Graph with Object Relationships (ongoing), Machine Learning Lab - IIITH

- The goal is to generate a view-independent 3D scene graph that remains invariant to scene orientation, ensuring consistent structural representation across different viewpoints.

MOGRAS: Human Motion with Grasping in 3D Scenes (ongoing), Machine Learning Lab - IIITH

- Our goal is to develop a system synthesising realistic human actions, including motion and object grasping, within a 3D scene.

FreeEdit, Machine Learning Lab - IIITH

- Our focus is on enabling 3D scene edits—such as object insertion, replacement, and deletion—in a training-free manner using mesh representations as a cost-effective alternative to traditional training-based methods.
- github.com/vivekmadhavaram/FreeEdit

Smart Build Insight, Hexagon Capability Center

- The project involves a web/mobile application designed to provide comprehensive insights into construction projects, enhancing tracking and management in the private sector.

Student performance analysis, VNR Vignana Jyothi Institute of Engineering and Technology

- A project aimed at analyzing key factors influencing student performance, including entrance exam scores, internal assessments, and other academic metrics.

Smart Latch, ORL Makers Garage

- An IoT-based home security device that captures an image of the person ringing the doorbell and notifies the home-owner, allowing remote door access control based on their response.

Events and Achievements

Achievements: Won first prize in a Hexagon Capability Center hackathon, runner up in Spark720 Hexagon hackathon and ranked among the top 10 teams globally in another Hexagon hackathon. Stood as runner up in hackathon by ORL Industries.

Awards: Star Performer at Hexagon Capability Centre India.

Academic Excellence: Won the best project award during undergraduate studies.

Community & Technical Engagement: Member of CSI, participated in various technical events and served as a TA coordinator for an AI/ML workshop at IIIT Hyderabad.

Teaching & Mentorship: Instructor for selected topics at the 3D Vision Summer School at IIIT Hyderabad in 2023 and IIIT Bangalore in 2024.

Technologies

Languages: PL/SQL, C, C++, JAVA, Python

Technologies:

- **Deep Learning & Frameworks**: PyTorch, TensorFlow
- **3D Visualization**: Open3D, Trimesh
- **Web Development**: HTML, CSS, JavaScript, React, Bootstrap

CAD: Autodesk Revit, BricsCAD