Aryamaan Jain

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EDUCATION

PhD in Computer Science — Oct 2023 – Sep 2026 *(Expected)*
Inria, Université Côte d'Azur — *Sophia Antipolis, France*
Lab: GraphDeco · Advisor: Dr. Guillaume Cordonnier

BTech(Honours) + MS(Research) in Computer Science & Engineering — Jul 2019 – Jul 2023
IIIT Hyderabad — *Hyderabad, India*
Lab: CVIT · Advisor: Dr. Avinash Sharma · Co-advisor: Dr. KS Rajan
CGPA: 9.55/10.0 · Specialization: Artificial Intelligence

EXPERIENCE

Research Intern — *Mar 2023 – Oct 2023*
GraphDeco, Inria — *Sophia-Antipolis, France*
Developed a physically based terrain erosion simulation accelerated with a GPU implementation and learning based super-resolution.

Research Assistant — *Aug 2022 – Jan 2023*
CVIT and IHub-Data, IIIT Hyderabad — *Hyderabad, India*
Worked on 3D reconstruction of roads with LiDAR data from vehicles using the ICP algorithm.

Summer Intern — *May 2022 – Jul 2022*
Wells Fargo (Strategy, Digital & Innovation) — *Bengaluru, India*
Developed a VR Banking prototype on Oculus Quest 2. Created optimized 3D assets/scenes and integrated LLMs for user interaction via AWS.

Teaching Assistant — *Jan 2021 – Oct 2022*
IIIT Hyderabad — *Hyderabad, India*

- Foundations of Modern Machine Learning (IHub-Data), Jan 2022 - Oct 2022.
- Computer Graphics, Spring 2022.
- Computer System Organisation, Spring 2021.

SELECTED PUBLICATIONS

1. **Arenite: A Physics-based Sandstone Simulator**
   Zhanyu Yang, Aryamaan Jain, Guillaume Cordonnier, Marie-Paule Cani, Zhaopeng Wang, Bedrich Benes
   ACM Transactions on Graphics (SIGGRAPH), 2025
   GPU accelerated physics framework that generates sandstone formations by simulating the interplay of structural stress, erosion, and deposition.

2. **FastFlow: GPU Acceleration of Flow and Depression Routing for Landscape Simulation**
   Aryamaan Jain, Bernhard Kerbl, James Gain, Brandon Finley, Guillaume Cordonnier
   Computer Graphics Forum (Pacific Graphics), 2024 — **Best Paper Award**
   GPU based algorithm that simulates how water flows and pools across terrain. It achieves up to 52× speedup over current methods, enabling interactive terrain simulation.

3. **Efficient Debris-flow Simulation for Steep Terrain Erosion**
   Aryamaan Jain, Bedrich Benes, Guillaume Cordonnier
   ACM Transactions on Graphics (SIGGRAPH), 2024
   GPU erosion algorithm incorporating a novel mathematical formulation to accurately simulate steep-slope erosion and deposition.

4. **Learning Based Infinite Terrain Generation with Level of Detailing**
   Aryamaan Jain, Avinash Sharma, KS Rajan
   3DV, 2024

   GAN based generative framework using image completion and super-resolution to create infinite terrains with efficient quad-tree integration.

TECHNICAL SKILLS

- **Languages:** Python, C, C++, CUDA, GLSL
- **Core Libraries:** PyTorch, OpenGL, OpenCV, OpenMP, STL
- **Tools & Software:** Houdini, Blender, Unity, Terragen, Git, LaTeX, Bash

ACHIEVEMENTS

- DocWalker Scholarship 2026 recipient.
- Pierre Laffitte Prize 2025 finalist.
- Best Paper Award at Pacific Graphics 2024.
- Dean's/Merit List recipient, all semesters at IIIT Hyderabad.