IIT Mandi iHub & HCi Foundation
Technology in Harmony with Human Needs

ADVERTISEMENT
FOR
SIMULATION ENGINEER
IIT MANDI IHUB AND HCi FOUNDATION
A Section – 8 Company Location – IIT Mandi Campus

About: IIT Mandi iHub and HCi Foundation (iHub) is a section 8 company established under the National Mission on Interdisciplinary Cyber- Physical Systems (NM-ICPS). The focus area of IIT Mandi iHub is **"Human-Centered AI"** The vision of the iHub is to be an internationally recognized hub that nurtures HCi research, enables technology translation for industry, and scales skill development. The four areas of IIT Mandi iHub are Research and Technology Development, Skill Development, Incubation & Acceleration, and Collaboration. For more information, visit www.ihubiitmandi.in.

Applications are invited for the Position of Simulation Engineer

Apply Here: https://form.typeform.com/to/CR4juqk5

The Role

MI-RA (Multimodal Intelligence for Real-World Applications) Lab at iHub is one of India's most complete synchronized multimodal capture and compute labs: a 16-camera volumetric rig, OptiTrack motion capture, LiDAR, mmWave radar, an anechoic audio array, and a full physiological suite, all bound to a single master clock. We turn that captured reality into digital twins, sim-to-real training data, and validated Physical AI for partners across healthcare, robotics, manufacturing, and mobility.

We are hiring a **Simulation Engineer** to build the virtual side of this pipeline. We seek candidates with experience in **mechanical and physical simulation** (Finite Element Analysis, Computational Fluid Dynamics , and multiphysics simulation**), systems and process simulation** (Discrete-Event Simulation, robotics simulation, and process control simulation), or **electronics and software simulation** (Circuit/Very Large-Scale Integration (VLSI) simulation, digital twin development, and physics-based simulation).

The role will involve building digital twins, working on physics simulation, 3D reconstruction, robotics simulation, and the engagement in NVIDIA Physical AI stack.

Responsibilities:

- **Digital twins.** Building digital twins of factory cells, clinical spaces, and outdoor scenes from MI-RA capture data, and keeping them in sync with the physical world.
- **Simulation and Sim-to-Real**. Setting up robotics and human-in-the-loop simulations, running sim-to-real experiments, and measuring the gap between simulated and measured behaviour.
- **3D reconstruction.** Reconstructing scenes from multi-view video and sensor data (Gaussian Splatting, NeRF-family methods, neural reconstruction) and preparing them for downstream training.
- **Data plumbing.** Wiring real-time and batch data pipelines from lab sensors, ROS 2, and industrial protocols into the simulator, with proper schema and provenance discipline.
- **Validation.** Running validation on synthetic and generated data: temporal alignment, calibration, and anomaly checks so bad data does not poison downstream models.
- **Productization.** Packaging your work as reusable services (containers, inference microservices) and documenting it so faculty, industry partners, and future team members can build on it.

Core Experience and Skills Required:

- Experience in one or more areas of simulation, including in **mechanical and physical simulation** (Finite Element Analysis, Computational Fluid Dynamics , and multiphysics simulation**), systems and process simulation** (Discrete-Event Simulation, robotics simulation, and process control simulation), or **electronics and software simulation** (Circuit/Very Large-Scale Integration (VLSI) simulation, digital twin development, and physics-based simulation).
- Strong Python; comfortable in C++ or CUDA when performance matters.
- Practical experience with at least one modern simulation environment: NVIDIA Isaac Sim / Isaac Lab, MuJoCo, Gazebo, Ansys, COMSOL, Unity, or Unreal.
- Working knowledge of the NVIDIA ecosystem (any subset of Isaac, Omniverse, OpenUSD, Cosmos, NuRec, PhysicsNeMo, NIM, Triton, or Holoscan), and a demonstrated habit of keeping up with new releases.
- Foundations in rigid-body dynamics, coordinate frames, and 3D geometry; comfort with PyTorch or JAX for anything model-shaped.
- The usual professional toolkit: Linux, Docker, Git, and a habit of writing tests and documentation without being asked.

Qualification

Position	Qualification	Years of Experience
Simulation Engineer	M.Tech / M.E. preferred; B.Tech with a strong portfolio equally welcome	2 to 4 years of post-degree experience.

Desirable Experience & Skills:

- Prior work on a shipped digital twin in industry, healthcare, mobility, or infrastructure.
- Hands-on with 3D Gaussian Splatting, NeRF variants, or differentiable rendering.
- Experience with vision-language-action models, GR00T-style pipelines, MimicGen, or synthetic data generation at scale.
- Familiarity with multi-view capture, camera calibration, or motion capture workflows.
- Open-source contributions, publications at CVPR / ICRA / RSS / CoRL / SIGGRAPH, or NVIDIA-DLI certifications.
- Exposure to regulated environments (medical devices, automotive, aerospace) where simulation supports evidence.
- If you are working in this field and this description sounds like the kind of work you want to do next, please apply.

Renumeration:

Position	Renumeration
Simulation Engineer	Up to INR 60,000/- per month based on experience.

Terms/Instructions:

1. *Only shortlisted candidates will be contacted/informed through email/phone.*
2. *IIT Mandi iHub and HCi Foundation reserves the right to fill up the post, not to fill up the position or cancel the advertisement in whole or part without assigning any reason. The company also reserves the right to limit the number of candidates to be called for written tests/or interviews. The decision of the company in this regard will be final.*
3. *Documentary evidence of all educational and professional qualifications will be required to be*

produced when specified.

4. *The company can verify the antecedents or documents submitted by a candidate before the appointment, at the time of appointment, or during the tenure of the service. In case it is detected that the documents submitted by the candidates are fake or the candidate has clandestine antecedents/background and has suppressed the said information, then their services shall be terminated.*
5. *If it is found later that any information given in the application is incorrect/false, the candidature/ appointment is liable to be cancelled/terminated.*
6. ***The applications will be considered till the post is filled.***

Contact us: IIT Mandi iHub and HCi Foundation, IIT Mandi, North Campus, Kamand, District Mandi, Himachal Pradesh 175005
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Website: www.ihubiitmandi.in

Note: All applications should be routed through the application link provided for each position in the advertisement. Email us only in case of questions