Training Notification Form, IIT Delhi

Company Overview

Name: Sony Japan

Website: https://www.sony.com/en/

Company Type: Information Technology

Description: Sony was established by founders who shared a dream and a strong will to enrich people's lives through the power of technology. From our founders' dreams and aspirations, Sony has grown over the years connecting more people with their dreams.
Sony runs a diverse portfolio of businesses from Electronic Business to Music, Movies, and Entertainment, all of which center around "People".
Talents from all over the world have been playing critical roles to make this happen, and will continue to in light of our journey ahead.
We are excited to continue trailblazing with a globally oriented mindset, and we ask that you consider joining us on our journey ahead!

Project Details

Designation: TNF 10 : Continuum Mechanics Researcher/Engineer

Type: Information Technology

Location: Tokyo, Japan

Project Details: [Technology Field]
Physical analysis solver development

[Position Summary]
The Finite Element Method (FEM) is most often utilized for simulation in the analysis of deformation. While FEM is accurate for small deformations, there are disadvantages, including that the calculation does not converge for large deformations such as elastomer or thin film.

To solve this problem, we are focusing on a new method called the Material Point Method (MPM), which can analyze flexible materials or large deformations that would be difficult to analyze with FEM, and our intention is to apply MPM to future product design.

Our focus points for MPM include processing acceleration, accuracy verification, and add-in function development for open-source software, such as ParaView.

[Responsibilities]
Below are example responsibilities. We will negotiate actual responsibilities according to the applicant's fit for our team and their wishes.
- Implementation of an explicit or implicit MPM solver.
- Implementation of an algorithm verification model about MPM with Python, C++, or C#.
- Addition of MPM functions to open-source post-process software, such as ParaView

- Acceleration of MPM calculations using Taichi.
- Research of academic papers and understanding of MPM-related academic trends.

[Required qualifications]
- Over 1 year of experience with one or more general purpose programming languages, including C++, C#, and Python.
- Publication of one or more academic papers about MPM.
- Ability to speak and write in English fluently and idiomatically, although it is not necessary to be a native speaker.

[Preferred qualifications]
- Experience developing Windows GUI application software using Visual Studio.
- Experience implementing multithread processing using CUDA or multicore CPU.
- Motivation to contribute to games and development in the metaverse from a physical perspective (i.e. the ability to apply skills and knowledge related to physics simulators to enhance the realism and immersion of virtual environments).
- Mechanical and Fluid Dynamics Skills/Knowledge: Strong background in mechanical engineering and fluid dynamics, with knowledge and expertise in the modeling and simulation of physical systems, an understanding of principles in mechanics, and the ability to apply concepts from fluid dynamics.
- Coding Skills: Strong coding skills, particularly in numerical computation techniques, and the ability to implement numerical algorithms and simulations.

[Product, Service]
Simulation and verification for the following applications using MPM solvers:
- Human interface of VR/AR glasses or headphones/earphones.
- Robot hands or soft robotics.
- Flexible or thin materials.

[Development Environment]
Windows

Stipend Details

Stipend:	10,000 JPY Per Working Day
Accommodation:	Yes
Travel Expenses:	Yes
Perks / Bonus:	[Stipend] Bachelor: JPY 10,000/ working day (Net) Master: JPY 11,000/ working day (Net) Your stipend will be calculated based on the working day. Example: If there are 22 working days in a month, net stipend in a month is Bachelor JPY 220,000 / month (Net) Master JPY 242,000 / month (Net) [Other Benefits/Support] Single rental apartment/hotel with Wifi, Visa, flight, commuting fee, international travel insurance all provided by Sony.

Selection Process

Selection Process

Resume Shortlist:	Yes
Written Test:	No
Online Test:	No
Group Discussion:	No
Personal Interview:	Yes
No. of Offers:	2
Selection Process:	*To submit CV& Essay is compulsory. The Essay format will be distributed through placement office. Please follow the instruction given by the placement office.

Eligibility

Diversity Recruiting:	No
Eligible Years:	Graduating in 2025 (Pre-Final Year Students) - B.Tech / Dual / Master's
Eligible Departments:	B.Tech in Biochemical Engineering & Biotechnology, B.Tech in Chemical Engineering, B.Tech in Civil Engineering, B.Tech in Computer Science & Engineering, B.Tech in Electrical Engineering, B.Tech in Electrical Engineering (Power and Automation), B.Tech in Energy Engineering, B.Tech in Engineering Physics, B.Tech in Engineering and Computational Mechanics, B.Tech in Materials Engineering, B.Tech in Mathematics & Computing, B.Tech in Mechanical Engineering, B.Tech in Production & Industrial Engineering, B.Tech in Textile Engineering, B.Tech and M.Tech in Chemical Engineering, B.Tech and M.Tech in Computer Science & Engineering, B.Tech and M.Tech in Mathematics & Computing, M.Sc in Chemistry, M.Sc in Cognitive Science, M.Sc in Economics, M.Sc in Mathematics, M.Sc in Physics, Master of Design in Industrial Design