

Rahul Gulati, Research Associate at University of Southern California
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EDUCATION

University of Wisconsin-Madison, Madison, WI Aug 2018 - Jan 2024
Ph. D., Mechanical Engineering. Minor in Mathematics. GPA: 3.96/4.0
M. S., Mechanical Engineering GPA: 4.0/4.0

Indian Institute of Technology (IIT) Ropar, India Aug 2009 - May 2013
B. Tech., Mechanical Engineering. Rank 1 across all departments. GPA: 9.54/10

RELEVANT COURSEWORK

Machine Learning | High Performance Computing | Linear Algebra | Computational Maths | Nonlinear Optimization | Analysis | Computer Aided Geometric Design

RELEVANT PROJECT EXPERIENCE

AI Teaching Assistant: Domain-specific Teaching Assistant/ Chatbot January 2024 - present

- Developing an AI Teaching Assistant for a Computational Physics course, leveraging domain-specific expertise.
- Retrieval-Augmented Generation (RAG) system leveraging a fine-tuned multimodal Large Language Model (LLM) using Llama 3.2-11B pretrained transformer, fine-tuned with curated Question-Answer pairs.
- Planned to enhance the AI's ability to learn spatio-temporal Multiphysics phenomena from simulation images using Vision Transformers.
- Aimed at improving education with a specialized AI assistant for targeted academic support.

WORK EXPERIENCE

Viterbi School of Engineering, University of Southern California (USC) Los Angeles, CA
Postdoctoral Research Associate Jan 2024 – present

Oil and Natural Gas Corporation Limited (ONGC) Mumbai, India
Executive Engineer Dec 2013 - Aug 2018

Aston University Birmingham, UK
Summer Research Intern May 2012 - Aug 2012

ACCOMPLISHMENTS AND HONOURS

- Received **President of India Gold Medal** for highest CGPA among 2013 undergraduates.
- Received **Director Gold Medal** for All Round Performance, 2013.
- Was chosen to attend **Sustainable Energy** workshop at **University of New South Wales**, Sydney. (2012).
- Selected for **DAAD WISE-2012** scholarship for Summer Internship in Germany.
- Receiver of Institute's Top 7% Scholarship for 5 semesters during B. Tech at IIT Ropar.
- **Teaching assistant** for multiple Mechanics of Materials courses at UW Madison (2018-2020).
- **Class Representative** of Mechanical Department throughout four years of B. Tech at IIT Ropar.
- Board Member of Society of Mechanical Engineers (SME) during B. Tech. at IIT Ropar.
- State Coordinator of Testing of 'Aakash' (Low-Cost Access Device), a Project of Indian Government.
- Participant in Technology Vision exercise by TIFAC (2013), Government of India.
- Secured All India Rank 246 in GATE 2013.

INVOLVEMENT EXPERIENCE

- Mentored a student of color with UW-Madison's DDEEA (Fall 2019).
- Mentored four international students through ISS BRIDGE program (Spring 2020)
- Awarded Mr. Bridge by ISS, UW-Madison for promoting global awareness and friendship.
- Selected for *Wisconsin Experience Bus Trip* (WEBT 2019) amongst campus student leaders.
- Volunteered at: UW-Madison Science Expedition, Second Harvest Food Bank, Disability Pride Madison, Ironman Wisconsin, Tour of Madison for International students, Spring Powwow, BadgerSpill (counsellor).