14th March 2023

## Call for Internship

**Internship Opportunity:** Artificial Intelligence Approach to Predict Viscous Fingering in Hele Shaw Flow.

Sardar Patel College of Engineering is excited to announce an outstanding internship opportunity for students supported by the Science and Engineering Research Board (SERB) under Social Scientific Responsibility (SSR) activity. The SERB sponsored project, titled "Investigation of Fractal Growth on the Curved Surfaces in Hele Shaw Flow", offers a unique chance to delve into the fascinating world of fluid dynamics and AI application.

**About the Project:** The project aims to explore the complex phenomena of fractal growth patterns on curved surfaces within the context of Hele Shaw flow. By focusing on the deployment of Artificial Intelligence, this internship will contribute to predicting viscous fingering generated from Taylor and Saffman instability in confined fluids. This research is at the cutting edge of fluid mechanics and AI, offering invaluable experience and knowledge in both fields.

**Internship Details:**
- Duration: 2 months (Slot 13th May 2024 – 31st August 2024)
- Location: Work will be conducted in a state-of-the-art laboratory of SPCE.
- Roles and Responsibilities:
  - Collaborate with a team of researchers to design and implement AI models.
  - Analyze and interpret data related to viscous fingering and fractal growth.
  - Contribute to the development of innovative AI strategies to predict and analyze instability patterns in confined fluids.
  - Participate in regular meetings and present findings to the project team.

**Who Should Apply**:
- Students currently enrolled in Third Year of undergraduate programs in Mechanical Engineering, Computer Engineering or related fields.
- Individuals with a keen interest in fluid dynamics, AI, and computational modeling.
- Candidates with experience in machine learning, data analysis, or numerical simulation will be given preference.

**What We Offer**:
- An opportunity to contribute to groundbreaking research sponsored by SERB.
- Hands-on experience on indigenously developed fluid shaping setup.
- Mentorship from leading experts in the field.
- A certificate of completion and recommendations for future opportunities based on performance.
- Stipend of Rs 5000 (Rs Five Thousand only) per month (maximum for two months duration).
- Reimbursement of Local Travel Expenses.

**How to Apply**: Interested candidates should submit their resume, a cover letter explaining their interest in the project, and any relevant academic or project references. Please include a brief description of your experience with AI, machine learning, or fluid dynamics if applicable.

Applications are open until 25<sup>th</sup> April 2024. For more information and to apply, please contact Mr. Jugal Jagtap (Mobile 9892687322, Email: m2272003@spce.ac.in, jugaljagtap@gmail.com , Application shall be submitted through the google link https://forms.gle/YAff5PkUFhnFRihH7 ).

Shortlisted candidates will be communicated by an email by 7<sup>th</sup> May 2024.

Join us in advancing the frontiers of research in fluid dynamics and artificial intelligence. This internship not only offers a deep dive into a cutting-edge scientific investigation but also the chance to make significant contributions to the field. We look forward to your applications and the unique perspectives you will bring to our project!

Dr. Kiran Suresh Bhole,
Principal Investigator,
SERB Sponsored Project CRG/2021/000747