

Position Description

Date: September 2023

Title: Postdoctoral Scholar

Department: Mechanical and Aerospace Engineering

School: Case School of Engineering

Location: 10900 Euclid Ave Cleveland OH 44106

Supervisor Name and Title: Chirag Kharangate, Assistant Professor

Contact information: Email: chirag.kharangate@case.edu; Phone: (216)368-2029

POSITION OBJECTIVE

Postdoctoral position in the Two-Phase Flow and Thermal Management Lab at Case Western Reserve University to do research in two-phase flows with focus on machine learning application to phase-change thermal management systems, including autonomous vision and Physics-informed neural networks (PINNs).

ESSENTIAL FUNCTIONS

1. Develop physics-informed machine learning modeling tools and validate with experiments performed in the lab (40%)
2. Perform experiments in two-phase flows for boiling and condensation (15%)
3. Perform CFD simulations in two-phase flows for boiling and condensation (15%)
4. Publish peer-reviewed journal papers and attend international conferences to disseminate and share research (20%)
5. Coordinate with sponsors for meeting research project deliverables (10%)
6. Advise graduate and undergraduate students at the Two-Phase Flow and Thermal Management Lab in conducting their research projects relating to boiling and condensation experiments and modeling (10%)

NONESSENTIAL FUNCTIONS

Attend department and school education and outreach activities

CONTACTS

Department: continuous (66+%)

University: infrequent (up to 5%)

External: moderate (16-30%)

Students: moderate (16-30%)

Job Title

SUPERVISORY RESPONSIBILITY

None

QUALIFICATIONS

Experience: 0+

Education/Licensing: PhD in Engineering

REQUIRED SKILLS

1. Machine Learning/ Neural Networks
2. ANSYS Fluent/COMSOL multiphasic Solver
3. C, Matlab
4. Experimental design and thermal-fluidic testing experience in lab setting

WORKING CONDITIONS

No special working conditions.