

# position description

Date: March 2024

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](mailto: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 computer vision tools to investigate flow boiling imaging data from experiments (20%)
2. Develop physics-informed machine learning modeling tools and validate with experiments performed in the lab (20%)
3. Perform experiments in two-phase flows for boiling and condensation (15%)
4. Perform CFD simulations in two-phase flows for boiling and condensation (15%)
5. Publish peer-reviewed journal papers and attend international conferences to disseminate and share research (20%)
6. Coordinate with sponsors for meeting research project deliverables (10%)
7. 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

Job Title

**CONTACTS**

Department: continuous (66+%)

University: infrequent (up to 5%)

External: moderate (16-30%)

Students: moderate (16-30%)

SUPERVISORY RESPONSIBILITY

None

**QUALIFICATIONS**

Experience: 0+

Education/Licensing: PhD in Engineering or Computer Science

**REQUIRED SKILLS**

1. Machine Learning/ Neural Networks/ Computer Vision

**RECOMMENDED SKILLS**

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

**WORKING CONDITIONS**

No special working conditions.

*Please submit your CV and names of three references to [crk91@case.edu](mailto:crk91@case.edu).*