

Sheikh Md Shakeel Hassan

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EDUCATION

University of California Irvine

Irvine, USA

MS/Ph.D. in Electrical and Computer Engineering

2022–Current

- **Research Interest:** Scientific Machine Learning, Operator Learning for PDEs, Neural PDE Solvers for Multiphase Physics, High Performance Computing, Stability of long rollouts
- **Advisor:** Dr. Aparna Chandramowlishwaran
- **Current GPA:** 3.97/4

National Institute of Technology Trichy

Trichy, India

B.Tech in Electronics and Communication Engineering with minor in Computer Science

2016–2020

- **Thesis:** Performance Analysis of Attention-based End-to-End ASR models for Indian English
- **Thesis Advisor:** Dr. R. K. Jeyachitra
- **GPA:** 8.26/10

RESEARCH EXPERIENCE

University of California Irvine

Irvine, USA

Graduate Student Researcher

Sept 2022–Current

Oak Ridge National Laboratory

Oak Ridge, USA

Graduate Research Intern, *Mentor: Dr. Pei Zhang*

Summer 2024

National Institute of Technology Trichy

Trichy, India

Undergraduate Researcher, *Advisors: Dr. R. K. Jeyachitra, Dr. E. S. Gopi*

Spring 2020, Summer 2018

INDUSTRY EXPERIENCE

AppyHigh

Gurugram, India

Artificial Intelligence Engineer

Jun 2020–Aug 2021

Senior Artificial Intelligence Research Scientist: Computer Vision, NLP

Sep 2021–Aug 2022

Essential Products

Bangalore, India

Speech Recognition Intern: NLP, *Mentor: Manish Garg*

Dec 2019–Jan 2020

InfyBytes AI Labs

Bangalore, India

Machine Learning Intern: NLP, Speech Recognition, *Mentor: Amrose Birani*

May–July 2019

SCHOLARSHIPS AND AWARDS

- UCI-TAU Conference People's Choice Poster Award 2025
- NeurIPS Scholar Award 2023
- UC Irvine EECS Department PhD Fellowship 2023–2024
- National Talent Scholarship for Undergraduate Education, awarded by NCERT India 2016–2020

PUBLICATIONS

Authors who made equal contributions are denoted with *.

1. **Sheikh Md Shakeel Hassan**, Xianwei Zou, Akash Dhruv, Vishwanath Ganesan, and Aparna Chandramowlishwaran. “Bubbleformer: Forecasting Boiling with Transformers”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2025 **Spotlight Paper**. NeurIPS Orals+Spotlight Acceptance Rate: [765/21575=3.5%].
2. **Sheikh Md Shakeel Hassan***, Arthur Feeney*, Akash Dhruv, Jihoon Kim, Youngjoon Suh, Jaiyoung Ryu, Yoonjin Won, and Aparna Chandramowlishwaran. “BubbleML: A Multiphase Multiphysics Dataset and Benchmarks for Machine Learning”, *Advances in Neural Information Processing Systems (NeurIPS)*, 2023 **Spotlight Paper**. NeurIPS Orals+Spotlight Acceptance Rate: [445/12343=3.6%].

Papers currently under review:

1. Xianwei Zou, **Sheikh Md Shakeel Hassan**, Arthur Feeney, Aparna Chandramowlishwaran. “History-Bootstrapped Flow Matching for Inverse Boiling Reconstruction”, *Under Review at ICML, 2026*
2. Arthur Feeney, Xianwei Zou, **Sheikh Md Shakeel Hassan**, Siddhartha Rachabathuni, Aparna Chandramowlishwaran. “NUCLEUS: A Unified Model of Boiling with Mixture of Experts”, *Under Review at ACM KDD, 2026*

TALKS (ABSTRACT ONLY)

1. **Sheikh Md Shakeel Hassan**. “From Prediction to Forecasting: Machine Learning for Boiling Dynamics”, *Argonne National Lab LANS Invited Seminar, 2025*.
2. **Sheikh Md Shakeel Hassan**, John Gounley, Paul Laiu, Pei Zhang. “MeshFormer: Hybrid Graph-Transformer for Learning Physical Simulations in Unstructured Meshes and Varying Geometries”, *Oak Ridge Leadership Computing Facility (OLCF) User Meeting, 2024*.
3. Akash Dhruv, **Shakeel Hassan**, Arthur Feeney, Aparna Chandramowlishwaran, Anshu Dubey. “Scientific Machine Learning Workflows for Phase-Change Heat Transfer Applications”, *76th Annual Meeting of the Division of Fluid Dynamics, Bulletin of the American Physical Society, 2023*.
4. Youngjoon Suh, **Shakeel Hassan**, Aparna Chandramowlishwaran, Yoonjin Won. “Need for Speed: Digitalizing Boiling Dynamics Using Deep Learning-Assisted Optical Flow”, *3rd Conference on Micro Flow and Interfacial Phenomena, 2023*.
5. Arthur Feeney, Youngjoon Suh, Jihoon Kim, Akash Dhruv, **Shakeel Hassan**, Jaiyoung Ryu, Aparna Chandramowlishwaran, and Yoonjin Won. “Scientific Machine Learning for Extrapolating Temperature Information”, *3rd Conference on Micro Flow and Interfacial Phenomena, 2023*.

PROGRAM COMMITTEE

- *Reviewer*, Advances in Neural Information Processing Systems (NeurIPS), 2025.
- *Reviewer*, Journal of Data-centric Machine Learning Research (DMLR), 2025.
- *External Reviewer*, Advances in Neural Information Processing Systems (NeurIPS), 2023.