Aakanksha Gubbala

Personal Website | agubbala@stanford.edu | +1 [redacted]

EDUCATION

Stanford University, Ph.D. Chemical Engineering — 2024 - 2027 (in progress)

University of California, Santa Barbara, Ph.D. Chemical Engineering (Transferred) — 2022 - 2024

Institute of Chemical Technology, Mumbai, B.S. Chemical Engineering — 2018 - 2022

RESEARCH EXPERIENCE

Graduate Researcher, Stanford — Jan 2025 - Present

- Developing Stokesian dynamics simulations for viscoelastic suspensions

Graduate Researcher, UCSB — Jan 2023 - Dec 2024

- Studied phase transitions in biological membranes using phase field theory and numerical models
- Discovered new coarsening growth laws and relaxation dynamics in active membranes
- Developed framework for viscous droplet growth in nematic mediums using liquid crystal theory

INDUSTRY

Intern | **Aleph**, Singapore — Jun 2022 - Aug 2022

- Implemented a surrogate-based optimization algorithm for plant design and operation
- Applied data processing, mapping, and visualization techniques for plant operation data

Intern | **Jayant Agro**, India — May 2021 - Sep 2021

- Investigated the kinetics of a complex process for the production of a high-value product
- Formulated & tested various non-ideal reactor models to design a specialized reactor
- Conducted optimization exercises to identify conditions for achieving maximum product yield

SKILLS

- **Programming:** Python, C/C++, MATLAB
- **Simulation:** GROMACS
- **Computational:** GPU/CUDA, Spectral methods, Finite element methods, Machine learning (Scikit-learn), Image analysis (Scikit-image, OpenCV)
- **Other:** Git, Linux, Make/CMake, Inkscape, HTML/CSS

SELECTED PUBLICATIONS

2. **Gubbala, A.** (co-first), Arnold, D. P. (co-first), Jena, A., Anujarerat, S., and Takatori, S. C. Dynamic Swarms Regulate the Morphology and Distribution of Soft Membrane Domains. *Phys. Rev. E* (2024). DOI: 10.1103/PhysRevE.110.014410

1. Arnold, D. P. (co-first), **Gubbala, A.** (co-first) and Takatori, S. C. Active Surface Flows Accelerate the Coarsening of Lipid Membrane Domains. *Phys. Rev. Lett.* (2023). **[cover article]** DOI: 10.1103/PhysRevLett.131.128402

AWARDS

Professor R.A.Rajadhyaksha Award for getting top grades in reaction engineering, ICT Mumbai — 2022

Bal S.Joshi Endowment for excellence in research, ICT Mumbai — 2021

TEACHING & LEADERSHIP

- **Research Mentor**, Takatori Lab | UCSB — Jul 2024 - Dec 2024
- **Teaching Assistant**, Undergraduate & Graduate Mathematics | UCSB — Fall 2023 & Fall 2024
- **DEI Representative**, ChE Graduate Student Association | UCSB — Oct 2023 - Sep 2024