

# Thomas Minh Nguyen

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## Summary

Chemical engineer/computational physicist trained in developing computational fluid dynamics (CFD) simulations. 7+ combined years of applying interdisciplinary technical expertise and problem-solving/analytical capabilities to address and solve problems in engineering and biomedical research settings. Key strengths include technical writing, project management, leadership skills, communication, continuous learning, attention to detail, and cross-functional collaboration.

## Education

### University of California-Davis

Ph.D. in Chemical Engineering | GPA: 3.69/4.00

Davis, CA

Sep. 2019 - Mar. 2025

**Research Focus: Bending and transport dynamics of fiber-like particles in viscous fluids for engineering and biomedical applications**

### North Carolina State University

B.S. in Chemical & Biomolecular Engineering | GPA: 3.77/4.00

Raleigh, NC

Aug. 2013 - May 2017

Minors: Biomanufacturing Sciences; Biotechnology

## Skills

### Programming/Software

Python (NumPy, SciPy, Pandas, Matplotlib, Seaborn, statsmodels, BioPython, multiprocessing), COMSOL, R (nlme, stats, ggplot2, Bioconductor), Bash/Unix/Shell, LaTeX, Git, GitHub, HPC Systems (slurm workload manager), MATLAB, AutoCAD, Microsoft Office

### Computational tools

Numerical methods (Finite difference methods (FDM), Finite element methods (FEM)), Statistical analysis (Non-linear mixed effects (NLME), analysis of variance (ANOVA), linear regression, t-test, false discovery rate (FDR) corrections), machine learning techniques (supervised clustering)

## Selected Work Experience

### Graduate Student Researcher

Davis, CA

UC Davis Department of Chemical Engineering

Jan. 2020 - Present

- Developed fluid-structure interaction (FSI) simulation code in Python to model elastic fiber-like particles in flow constrictions.
- Applied image processing methodologies to extract particle shapes from CFD simulations.
- Analyzed 500+ CFD simulations and 500+ experimental trials to inform of engineering approaches that reduce particle clogging around microfluidic flow bends by at least 25%.
- Authored technical documents associated with 3 research grant proposals, 5 research presentations, and 2+ peer-reviewed publications.

### Teaching Assistant

Davis, CA

UC Davis Department of Chemical Engineering

Jan. 2021 - Present

- Led technical labs and discussion sessions for 50+ students, articulating experimental protocols and data analysis through Python.
- Improved students' grades on subsequent reports by at least 20% through mentoring and detailed responses to needs and requests.

### Post-baccalaureate (Post-bac) Research Fellow

Baltimore, MD

National Institute on Aging, NIH

Oct. 2017 - Aug. 2019

- Served as a subject matter expert for bioinformatics data analysis, collaborating with 3 Post-doc fellows to advance research initiatives.
- Applied statistical and data science methods to determine age-associated changes within the immune system.
- Mentored junior Post-bac fellows, resulting in a 20% increase in team productivity and a 15% reduction in data analysis time through improved coding standards and practices.

### Flexible Volume Manufacturing Intern

Durham, NC

Biogen

Jun. 2017 - Aug. 2017

- Led the end-to-end development of a novel electronic system for tracking chemical reagents and solutions that surpassed FDA cGMP (21 CFR Part 210) regulations, ensuring alignment with project goals and specifications.
- Performed mixing studies to optimize chemical reagent preparation, analyzing data associated from 3 process parameters identified from standard operating procedures.