Sanjana Pemmaraju

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EDUCATION

The University of Texas at Austin, Austin, Texas
Bachelor of Science in Environmental Engineering, minor in Sustainable Energy, May 2025

Relevant Coursework: Sustainable Systems Engineering (Python), Computer Methods (MATLAB), Statics, Foundations of Environmental Engineering (Arduino), Engineering Physics I & II

Technical University of Denmark, Copenhagen, Denmark
Foreign Exchange, Spring Semester 2023

Relevant Coursework: Regional and Global Air Pollution Effects, Chemicals in the Environment, Introduction to Future Energy, Introduction to Statistics (R)

HONORS AND GRANTS

Academy of Distinguished Alumni Scholarship for Undergraduate Research, Spring 2022

RESEARCH EXPERIENCE

University of Texas at Austin, Environmental and Water Resources Engineering Department
Undergraduate Research Assistant, August 2021 – Present
Advisors: Dr. Manish Kumar, Sophie De Respino, Charan Samineni
Demonstrate the feasibility of using an affinity-based depth filter fabricated from readily available plant-based materials- *Moringa oleifera* (MO) seeds- to achieve high-efficiency nanoparticulate removal. Using the established antifungal and coagulant activities of cationic proteins- MO coagulant protein and MO chitin-binding protein (MoCBP)- to test removal of nanoparticles such as sPsL particles, AgNP, and PFAS from drinking water.

PUBLICATIONS

L. Samineni, S. De Respino, M. DePaolis, R. Mohanty, Y. Tu, **S. Pemmaraju**…M. Kumar.
    "Highly Effective Nanoparticle Removal in Plant-Based Water Filters." (2023)
    Environmental Science: Advances

LEADERSHIP/SERVICE

Department of Civil, Architectural, and Environmental Engineering (CAEE) Undergraduate Advisory Board

Board Member, Project Lead, August 2022 - Present
Implemented student-advising program to help freshman class of 200 students with degree planning by pairing upperclassmen with underclassmen. Gathered feedback from 138 CAEE students and lead creation of a unified curriculum for the "CE 311K - Computer Methods" class.

MEMBERSHIP

Women in Civil, Architectural, and Environmental Engineering (2021 – Present)
Engineers for a Sustainable World (2022 – Present)

TECHNICAL SKILLS

Computational: Python, MATLAB, R, Arduino (C++), data visualization (matplotlib, ggplot), Microsoft Office Suite, WordPress, Canva, Procreate

Wet Laboratory: Water filtration and membrane engineering, crude protein purification of target protein in Moringa oleifera using dialysis tubing and fluorometric peptide assay, sand ballasted coagulation experiments using jar tests.

LANGUAGES

Spanish (conversational, written)
Gujrati (conversational)
Hindi (conversational)