



**Santa Clara
Engineering**

Senior Design Projects (FIH) 2024-2025

**Frugal
InnovationHub**

SANTA CLARA UNIVERSITY
SCHOOL OF ENGINEERING

Project name	Short Description	Organization	Location	Depart.	Students- Majors and Minors	Advisor
Bending, Compression & Life Cycle Analysis of a Local and Recyclable Material	This project explores using the Homeko structure, made from recycled Tetra Pak cardboard, in California to tackle seismic safety and homelessness. It compares materials, designs, and environmental impacts to find the best sustainable housing solution.	Universidad Javeriana Bogotá	Colombia	Civil engineering	Christopher Rivas Castillo	Rocio Segura, PhD: Civil Engineering
Sustainable Water Solution for San Jose Urban Garden	Partnering with the Urban Growers Network (UGN), a group of environmental education organizations, this project designs a sustainable water supply to irrigate crops. Specifically, it will be an acre of crops in a new garden along the Guadalupe River.	Urban Growers Network - Taylor Hartwig is contact	San Jose, Ca. USA	Civil engineering	Annie Tartell, Isa Garcia, Julia Cornejo, Katherine Leisenring (Katie)	Laura Doyle PhD: Civil Engineering
Portuguese for Mozambican Mothers – A Language Empowerment App	Designed as a learning supplement to be used with moderator support, this mobile app helps mothers in the DIFF EDUCATION program in Mozambique learn Portuguese through visuals and audio to improve their ability to communicate in urban settings.	DIFF-Education	Mozambique	Computer engineering	Sara Wheeler , Alexandre Lopes , Gwendolyn Patwardhan , Josh Kindarara , Riana Santos	Silvia Figueira, PhD : Computer Science & Engineering
Bilingual Buddy	Bilingual Buddy is an educational app designed to help young students transition from Spanish to English. It combines interactive math exercises with foundational language-building activities to support their academic development.	San Miguel Elementary School	Sunnyvale, Ca. USA	Computer engineering	Adian Alvarado, Farhaan Pishori, Luis Villalta Andrea Yao	Silvia Figueira, PhD : Computer Science & Engineering
Preserving Yucatán's Agricultural Heritage: A Mobile App for Agricultural Sustainability	A bilingual mobile app for Yucatán's farmers, integrating GIS with traditional Mayan agricultural knowledge. This tool empowers farmers to make informed decisions, preserves cultural practices, and improves productivity.	Universidad del Oriente. Yucatán México	Yucatán, Mexico	Computer engineering	Jason Serrano Kavya Sharma, Fernando Rojas	Angela Musurlian, PhD: Computer Science and Engineering Maia Dedrick, PhD: Anthropology
Cob Structure Optimization for Oaxacan Community Center	Community Center for under resourced community in Oaxaca, Mexico. Constructed out of Cob and wood Optimizing bio-design with local materials. Structural, geotechnical, and life cycle cost analysis.	GRUPEDSAC	Naucalpan, México		Dana Johnson Alfonso Zepeda Perez Benjamin Lanzas	Laura Doyle PhD: Civil Engineering
Pajaro Levee Remedial Design for Climate Resiliency	Due to climate change, underrepresented residents in Pajaro, CA need a more resilient flood solution. This project aims to design a climate-adaptable levee offering 100-year flood protection, as current infrastructure has failed.	Community at large	Pajaro Community. Watsonville (Ca.) USA	Civil engineering/EVS	Karina Martin, Anna Krebs Olivia Leonardis	Ed Mauer, PhD: Civil Engineering. Iris Steward-Fry, PhD, Environmental Sciences and Studies

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