

FACULTY SPOTLIGHT

7 Questions with *Javier Gonzalez-Sanchez*

Assistant Professor, Computer Science and Software Engineering

Hometown: Guadalajara, Mexico

What brought you to Cal Poly College of Engineering?

While I was seeking a reputable institution to continue my growth as a researcher and scholar, my fiancée and I were also searching for the ideal location to establish our home and begin our family journey. Our combined search led us to the perfect convergence here — a thriving college located in a charming town with beautiful natural surroundings.

Tell me about your research interests and why you are passionate about this topic.

My research is situated at the nexus of software engineering and human-computer interaction, focusing on developing intelligent systems capable of demonstrating empathy. This involves understanding human emotions and cognitive capabilities and using this knowledge to foster strong relationships through enhanced interactions.

I am deeply passionate about the potential to improve various industries through this work, including education, health care, manufacturing and entertainment. This includes computer tutors adapting to students who are bored or cognitively challenged; robots in manufacturing lines better responding to the stress levels of operators; video games adjusting to the engagement and performance of players; and rehabilitation machines attuned to the affective states of patients.

This research allows me to collaborate with multidisciplinary teams of experts, not only in computer science but also in psychology, industrial engineering, health care and education. It also provides me with the opportunity to utilize a range of novel technologies, including brain-computer interfaces, eye-tracking, biometrics and virtual and augmented reality.

What is your favorite part of your job?

I enjoy engaging students in research projects, as it provides a unique opportunity to blend teaching with hands-on experience.

How do you like to spend your free time?

I enjoy hiking or walking on the nearby beaches.

What is the most helpful advice you've received?

Step out of your comfort zone. It's all about growing into a better and more self-aware person, and sometimes, in moments of uncertainty and challenge, we discover our greatest strengths and abilities.

How does engineering apply to your daily life?

I see practical applications of engineering in the algorithms and software that operate smartphones and computers, which are integral to my daily routine. For instance, they help me stay in constant touch with family abroad, order groceries online, manage banking operations, support my students, collaborate with colleagues and even have fun playing a video game with my wife at night.

How do you support the college's commitment to justice, equity, diversity and inclusion?

I am fortunate to have been able to engage in various programs supporting underrepresented student populations including the Learning Aligned Employment Program (LAEP), the Engineering Possibilities in College (EPIC) program and the Summer Undergraduate Research Program (SURP). I am involved in a project supported by a grant from the Office of University Diversity and Inclusion to expand pipeline outreach activities in K-12 partner schools with robotics and computational thinking education. Besides that, I have been involved as a mentor for Hispanic U.S. college students aspiring to pursue a graduate education, thanks to an invitation from the Society of Hispanic Professional Engineers (SHPE).