

Software engineering grad finds purpose through project that protects others

Graduate student Rahul Manoj brings architectural insight to the 3D bone atlas project

By Kelly deVos, ASU News
December 11, 2025

Editor's note: This story is part of a series of profiles of notable [fall 2025 graduates](#).

When Rahul Manoj talks about software engineering, he doesn't start with code or algorithms. He starts with curiosity about people and systems, and about how thoughtful engineering can make a real difference.

It's this blend of technical skill and human-centered thinking that has shaped his time at Arizona State University's [Polytechnic campus](#), where he is now preparing to graduate in December with his master's degree in software engineering from the [School of Computing and Augmented Intelligence](#), part of the [Ira A. Fulton Schools of Engineering](#) at ASU.

Gaining perspective before pursuing purpose

Before coming to ASU, Manoj already had years of real-world experience under his belt. Raised in Dubai and educated at the International Institute of Information Technology in Hyderabad, India, he worked both at a startup and later at Amazon, where he encountered two distinctly different engineering cultures.

The startup environment was fast-paced and loosely structured, which pushed him to become adaptable and resourceful. In contrast, his time at Amazon introduced him to a far more deliberate and process-driven approach, where significant time was devoted to discussion, planning and design before any coding began. That experience helped shape his appreciation for strong software architecture and thoughtful engineering practices.

Ultimately, Manoj wanted more than experience. He wanted growth.

“I wanted to hone my skills and improve myself, which is why I chose to come to ASU for this program,” he says. “The Polytechnic campus’s hands-on, project-driven approach to software engineering made it the right fit.”

Designing software that makes a difference

One project in particular defined Manoj’s graduate experience: [the 3D bone atlas](#), a collaborative effort led by [Kevin Gary](#), a Fulton Schools associate professor in software engineering, and ASU forensic anthropologist [Katelyn Bolhofner](#). Designed to help experts identify signs of elder abuse, the atlas uses 3D bone scans, measurement tools and AI-driven analysis to help investigators understand whether fractures resulted from accidents or intentional harm.

For Manoj, the project offered the chance to work in software engineering research.

“I’ve had my hands in all of that,” he says. “Front end, back end, deployment... it’s just all kinds of software-relevant work.”

He joined Gary’s lab after taking the instructor’s courses and discovering a shared passion for thoughtful, well-structured engineering. The work wasn’t just technically engaging; it was meaningful.

“I think that project is a really interesting intersection of social good and computer science,” he says.

At a forensic science conference earlier this year, Manoj helped present the software in a dedicated workshop room, where anthropologists used the atlas and offered feedback. Some of their reactions surprised him, particularly the experts’ concerns about data privacy. He recalls that investigators were quick to reject a social-sharing feature modeled after academic collaboration tools.

“We had a feed page and they were like, ‘Nope, we don’t want that,’” Manoj says. “It was a lesson in domain-specific design and the realities of building tools for sensitive fields.”

Gary praises Manoj’s contributions.

“From the beginning, Manoj stood out as someone who thinks like a software architect,” Gary says. “He’s always considering scalability, design and long-term impact.”

Finding balance beyond the classroom

Outside the lab, Manoj gravitated toward the open, relaxed feel of the Polytechnic campus, which offers a contrast to denser urban universities. He enjoyed the fitness center, where he played basketball or pool, and appreciated campus events, especially ones with the occasional free lunch.

His hobbies are wide-ranging, including reading, politics, singing and spending time with friends. But during the master’s program, academics and project work took center stage.

As he prepares to graduate, Manoj is focused on the job hunt. He hopes to find a role that leans heavily into software architecture and design, and offers work that allows him to step back from day-to-day coding and contribute to systems at a higher, more strategic level. After years of hands-on development experience, he's ready for positions that let him think holistically about how software is structured, built and scaled.

And for future students considering the same path, he offers simple but pointed advice.

"Have a clear path forward. Don't shy away from taking good courses," he says. "Come to ASU if you want to make the most use of your time."

Lessons that will last

Reflecting on what he's most proud of, Manoj doesn't single out a particular presentation, project or line of code. Instead, he talks about the kind of learning that comes from building things with purpose.

"You learn so much more when a project has intention behind it," he says. "Thinking about design, scale and who's going to use what you build gives you a different perspective than a project that's just there to look good on paper."

As he moves into his next chapter, Manoj carries with him not just stronger technical skills, but the confidence to take on complex problems and to build software systems that make a tangible difference.

This story originally appeared on [ASU News](#).

Main image



Rahul Manoj poses in front of the Arizona State University charter on the Polytechnic campus. Rahul graduates in December with a master's degree in software engineering from the School of Computing and Augmented Intelligence, part of the Ira A. Fulton Schools of Engineering at ASU. Courtesy photo