

## Mohammad Afrazi



Basic circuitry puzzles and games were the spark that ignited Mohammad Afrazi's passion for engineering as a teenager in Iran – a foundation that propelled him to earn undergraduate and graduate degrees in civil engineering. Now Afrazi is earning a second master's, this time in mechanical engineering with a robotics emphasis under Dr. Kooktae Lee at New Mexico Tech.

"After I got to civil engineering I saw a lot of repeatable jobs that we can make automatic," said Afrazi. "There are some dangerous areas that humans are working in, for example very tall buildings and tall bridges or underground structures, and they are dangerous to do maintenance. After seeing those jobs I got into robotics."

Afrazi said his primary goal in pursuing expertise across engineering disciplines is to center human safety by reducing the possibility of danger in risky jobs people have to perform without assistance from automation.

He has contributed to three books, including "Programming the Finite Element Method with Special Application in Geotechnical Engineering 1 and 2," and "Elastic Theory

of Materials." He is also co-author of more than 30 papers, including "Strength and Deformation Behaviour of Sand-rubber Mixture," in which researchers explored the use of waste tires to strengthen soils and sands in the construction of civil infrastructures.

During his academic career in Iran, Afrazi earned a bachelor of science in Civil Engineering at Shiraz University and a master's degree in the same discipline at Tarbiat Modares University in Tehran. There, he was president of the Civil Engineering Student Scientific Association of Iran, and editor of the student-run scientific journal Palar, winning a national award as the country's best scientific magazine by the Ministry of Science Research and Technology. He is an editor and reviewer for more than 20 scientific journals around the world and a member of the American Society of Civil Engineers and the Society of Mining Engineers.

"I want to make a robot to help humans – to do something that does something dangerous and hazardous and takes the burden of that from humans," said Afrazi. "Robotics nowadays are getting jobs from humans, the only areas that robots are helping humans in are in surgery or in areas hazardous or dangerous for humans."

Afrazi is a recipient of a President's Tuition Assistance Scholarship award. He said the award has enabled him to procure research and books he needs to pursue his education without putting a burden on his family. He hopes to pursue a doctorate in robotics after his graduation from New Mexico Tech.

