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SAN JOSE TEEN AWARDED \$50,000 FOR COMPUTER VISION PROJECT ASSESSING OPERATIVE SKILL

Amy Jin to be Named a 2018 Davidson Fellow

San Jose, Calif. – The Davidson Institute for Talent Development has announced the 2018 Davidson Fellows. Among the honorees is 18-year-old Amy Jin of San Jose. Jin won a \$50,000 Fellows Scholarship for her project, *Deep Learning-Based Automated Tool Detection and Operative Skill Assessment in Surgical Videos*. She is one of only 20 students across the country to receive this honor.

“I’m extremely honored to be a Davidson Fellow and to be a part of such an inspiring, passionate group of peers,” said Jin. “I’m grateful to the Davidson Institute for giving me the incredible opportunity to share my work and for supporting my pursuits in computing and technology.”

Jin’s project uses deep learning to recognize and track surgical instruments in videos, enabling rich analysis of tool movements and usage patterns to automatically assess operative skill. Jin’s research will help provide individualized training and targeted feedback to surgeons to improve surgical care quality. She leveraged region-based convolutional neural networks to facilitate operative skill assessment, extracting visual assessment metrics such as tool usage timelines, motion heat maps and tool trajectory maps.

At The Harker School, Jin served as president of the Women in STEM club and French National Honor Society, as well as the co-editor-in-chief of *Horizon*, a student-run science journal.

Outside of science, Jin loves to travel, play violin, hike and dance.

Jin will attend Harvard University in the fall, where she hopes to continue pursuing her interest in computer science and take courses in a breadth of subjects, including ethics and philosophy.

“We are thrilled to recognize the 2018 Davidson Fellows not only for their incredible projects, but also for the journey they forged to reach this point,” said Bob Davidson, founder of the Davidson Institute. “Every year I am amazed by the depth of the Fellows’ accomplishments. Through encouragement and recognition, the Davidson Institute for Talent Development anticipates that gifted students like these will be among the pioneers who will solve the world’s most vexing problems.”

The 2018 Davidson Fellows will be honored at a reception in Washington, D.C., on Friday, September 28.

The Davidson Fellows Scholarship program offers \$50,000, \$25,000 and \$10,000 college scholarships to students 18 or younger, who have completed significant projects that have the potential to benefit society in the fields of science, technology, engineering, mathematics, literature and music. The Davidson Fellows Scholarship has provided more than \$7.5 million in scholarship funds to more than 300 students since its inception in 2001, and has been named one of the most prestigious undergraduate scholarships by [U.S. News & World Report](#). It is a program of the Davidson Institute for Talent Development, a national nonprofit organization headquartered in Reno, Nev. that supports profoundly gifted youth.

About the Davidson Institute

Founded by Bob Davidson in 1999, the Davidson Institute for Talent Development recognizes, nurtures and supports profoundly intelligent young people, and provides opportunities for them to develop their talents to make a positive difference. The Institute offers support through a number of programs and services, including the Davidson Fellows

Scholarship and the [Davidson Academy of Nevada](http://www.DavidsonAcademyofNevada.org). For more information about the 2018 Davidson Fellows, please visit www.DavidsonGifted.org/Fellows-Scholarship.

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High-resolution photos are available at www.DavidsonGifted.org/Fellows-Scholarship.