

Grant will Allow USU Computer Engineers to Develop More Energy-efficient AI Hardware | College of Engineering

09/13/2021

Sept. 13, 2021 — Researchers from Utah State University's College of Engineering are working to develop more energy-efficient artificial intelligence hardware, thanks to a [grant from the National Science Foundation](#).



Computer engineering professors Sanghamitra Roy and Koushik Chakraborty will be working to develop more energy-efficient artificial intelligence hardware. (Matt Jensen/USU)

Computer engineering professors Sanghamitra Roy and Koushik Chakraborty were awarded the nearly half a million dollar grant last month. In addition to researching how to decrease the power consumed by AI hardware, Roy and Chakraborty will also explore how to tailor the AI hardware accelerator to learn more nuanced patterns without assistance from the cloud.

The research will have broad applications. According to Roy, the pair will begin the project with basic AI applications like natural language processing and recognizing text, speech, images, and activities. From there, the project will branch out to more complex applications such as fitness devices, self-driving cars and mission-critical applications.

As part of the project, Roy and Chakraborty will engage in significant community outreach including introducing high school girls to the technology through hands-on engineering exercises at USU's Engineering Extravaganza and disseminating AI learning modules to K-12 classrooms in Utah. Both of these outreach efforts are aimed at

cultivating talent to support Utah's rapidly growing technology sector.

The edge AI simulation platform developed in this project will be shared in an open-source Github repository, allowing academic and industrial researchers to explore AI hardware design techniques beyond those in this project.

The research will be done as part of [the USU Bridge lab](#) which focuses on interdisciplinary research to create gateways between computer architecture and physical design automation.

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