

New device and companion app let anyone safely trigger fireworks from their smartphones

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ZapSpark, a device created by a Purdue University professor, allows anyone to set off fireworks from a safe distance. Credit: Purdue University

A Purdue University professor has created a device and a companion smartphone app that allow anyone to set off fireworks from a safe distance.

The device, called ZapSpark, was created by Mithuna Thottethodi, an associate professor in Purdue's School of Electrical and Computer Engineering. ZapSpark is designed as a compact and easy-to-use technology that allows people to shoot off fireworks from up to 75 feet away.

"This device is easier to use, more affordable and more compact than other wireless firing systems," Thottethodi said. "Most backyard fireworks users will find remote triggering to be delightful and safe. We leverage the fact that most people carry a smartphone, which is basically a computer with built-in wireless transceivers. This eliminates the need for, and cost of, a dedicated remote controller."

Using ZapSpark requires only two steps – clicking in single-use igniter cables on one end of the firing module and then snapping in the igniter clip to the firework fuse. A user can fire up to eight fireworks with the app at one time from a single smartphone.

ZapSpark has "no accidental firing" and "instant shutdown" features that prevent the fireworks from being triggered by phone drops or hand slips. The app also features custom firework sequencing and music synchronization, making it 'drag-and-drop' simple for professional-

quality celebrations with no special training or professional skills.

Thottethodi said the [device](#) is also useful as a second system for quick deployment and testing for professional pyrotechnicians.

The Consumer Product Safety Commission reports that eight people died from [fireworks](#)-related injuries last year and 12,900 people were treated at U.S. hospitals.

"Remote firing devices like ZapSpark may help reduce that number," Thottethodi said.

The team has patent applications in process for the technology and expects to bring the product to market soon.

Provided by Purdue University

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