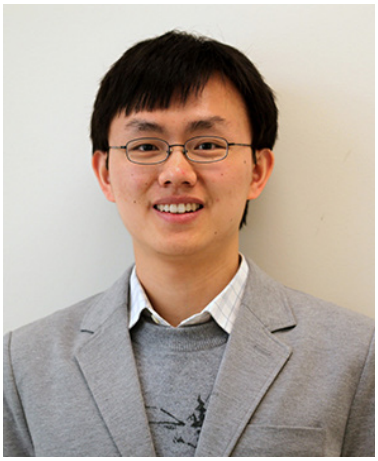
CARNEGIE MELLON UNIVERSITY
BME 2020 FALL SEMINAR SERIES

Adding a new sensing dimension to soft electronics: from the skin to below the skin



PRESENTED BY

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SCHEDULE

Thursday,
December 10, 2020
(10:00 AM-11:00AM)

Soft electronic devices that can noninvasively and continuously acquire vital signs from the human body represent an important trend for healthcare. Combined strategies of materials design and advanced microfabrication allow the integration of a variety of components and devices on a soft platform, resulting in functional systems with minimal constraints on the human body. In this presentation, I will demonstrate a wearable multichannel patch that can sense a collection of signals from the human skin in a wireless mode. Additionally, integrating high-performance ultrasonic transducers on the stretchable substrate adds a new third dimension to the detection range of conventional soft electronics. Ultrasound waves can penetrate the skin and noninvasively capture dynamic events in deep tissues, such as blood pressure and blood flow waveforms in central arteries and veins. This soft platform holds profound implications for a wide range of applications in consumer electronics, sports medicine, defense, and clinical practices.

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