

SmartBell: Providing Weightlifters with Immediate Performance Feedback
(Technical Report)

Is Expertise Needed? The Practical Implications of a Flood of Health Data
(STS Research Paper)

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by

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Preface

How can individuals best be informed about their health? Health information can help individuals make sound decisions, but because it often requires expert interpretation, information alone can be hazardous.

How can immediate, critical performance feedback be provided to weightlifters? In weightlifting a correct stance can prevent injury and help weightlifters target muscles. Without guidance from a personal trainer, weightlifters risk injury. Automated trackers gather statistical data, but generally do not advise weightlifters on correct form; those that do cost hundreds of dollars. The research team therefore developed SmartBell, a prototype wearable that tracks a weightlifter's form, presenting visual feedback. Instead of using infrared or laser sensors to build 3D images, SmartBell uses an inertial measurement unit to detect form. The prototype is inexpensive and may be mass producible. It is a standalone device, but future iterations may support connectivity with smartphones for greater accessibility and better performance.

How are wearables affecting wearers' health behavior? Wearables can monitor the wearer throughout the day, providing data that once required special medical devices and a visit to a health expert. Wearables can help doctors better treat their patients, but they can also complicate or impair the doctor-patient relationship and promote dangerous self-diagnoses. Manufacturers publicize life-changing benefits, while wearers use wearables to make health decisions, sometimes with inaccurate data or insufficient expertise.

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