SNail: Sensing the Strains From Fingernail As Always-Available Input

1st Author Name
Affiliation
City, Country
e-mail address

2nd Author Name
Affiliation
City, Country
e-mail address

3rd Author Name
Affiliation
City, Country
e-mail address

ABSTRACT
We present SNail, a nail-mounted device that sense user's fingernail contour and bend when force is applied on a surface. By using 3×3 array of 0.2mm strain gauges, SNail is small enough to fit within fingernail, and it is flexible and stretchable. Since the device is always available, it enables user to intuitively use smart TV/devices by simply performing gestures on surfaces around without touching devices. We evaluate this interface in motionless and motion mode. The system can achieved 90% accuracy for classifying with different kinds of finger posture angle, levels of pressure in motionless mode. For motion mode, it can distinguish directions of movement with high accuracy(>95%). We also show applications of using SNail, which lower the effort for ????.

Author Keywords
Natural User Interface (NUI); Wearable electronics; fingernail; Strain gauges;

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