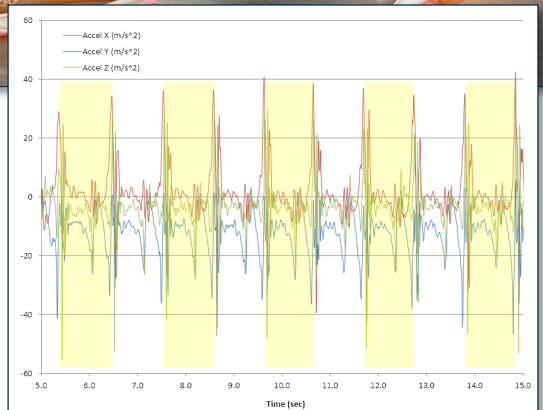
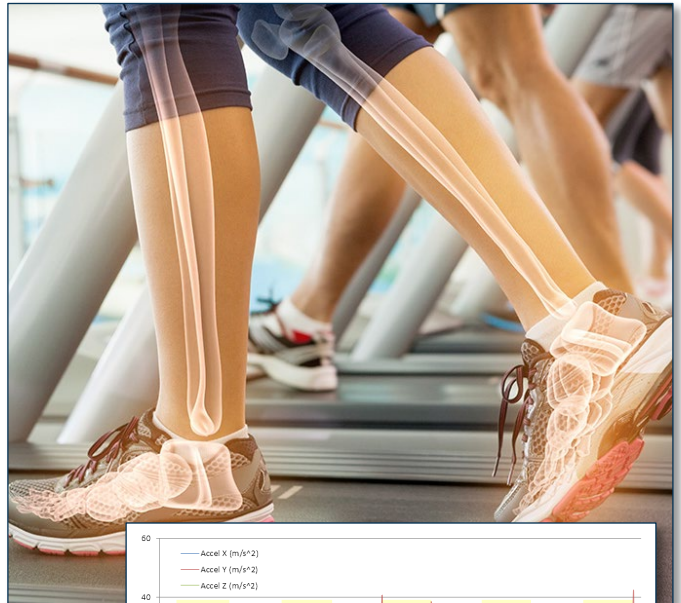


# VIRTUAL COACHING WEARABLE USING REAL-TIME FORM AND GAIT ANALYSIS

## OVERVIEW

Wearables offering simple quantified-self metrics like step-counting and daily activity profiles are commodities. Premium devices must offer far more user value and insight to maintain differentiation in the market. SensiML has been building tools and dataset expertise for creating differentiated wearable sensing devices for nearly 10 years. SensiML solutions include:

- End-to-end toolkit for creating real-time activity and form analysis on-device using SensiML sensor AI
- Gait analysis, form assessment, injury prevention and performance improvement derived from motion and acoustic, and biosensor classification models.
- Fully autonomous AI processing and insight, no cloud or smartphone companion processing required.
- Available, richly annotated, licensable datasets for selected applications including running, weight lifting, racket sports, and football



*Treadmill running protocol gait measurement for single channel of twelve total 9DoF sensors captured in SensiML virtual running coach model.*

## SensiML SOLUTION

### SensiML Analytics Toolkit

- Most comprehensive AI tool available for IoT edge devices
- No AI expertise required to use
- Binary, library, and source code AI algorithm output options
- Data Capture Lab: Easy, automated data collection & labeling
- Analytics Studio: Auto firmware creation from labeled data
- TestApp: AI model validation testing on target hardware

### SensiML Knowledge Pack

- Toolkit created algorithm for traffic analysis and classification
- Extremely compact: Memory footprint in kB not MB
- Local processing works anywhere, no cloud connectivity or network server infrastructure needed
- Support for Arm Cortex-M/A, x86, ARC architectures

### SensiML Datasets and Custom Engineering Support

- Existing sports motion datasets and models
- Fast time-to-market from expertise and prior projects
- Knowledgeable embedded IoT data science team

### SensiML Virtual Running Coach AI Dataset

Real-time running form assessment

Subjects	125 runners of varying skill, body type, gender, and age
Sensors	9DoF IMU x 11 on-body locations
Metadata	Height, weight, age, gender, shoe size/brand, skill, anthropometrics, flexibility score
Ground Truth	Recorded 4 PoV video with expert exercise physiologist labeling of 20 form dysfunctions

<https://sensiml.com/solutions/consumer/>

#### Additional Information

For further information on SensiML software, services, and datasets, please visit us online at <https://sensiml.com> or contact us via email at [info@sensiml.com](mailto:info@sensiml.com)