Advancing Analysis Techniques for Plantar Pressure Videos via the CAD WALK Open-Access Database

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Objective

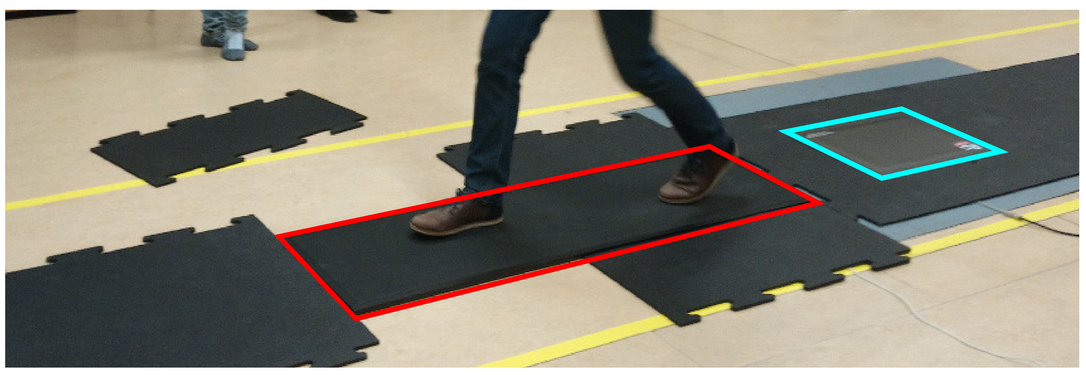
While dynamic plantar pressure measurements are commonly used for clinical evaluation of gait-related problems, computational analysis techniques for these datasets are few and far between.

To address this issue, we introduce an open-access database of plantar pressure videos for researchers to develop algorithms around.

Participate!

- Download our plantar pressure datasets at https://zenodo.org/communities/cad-walk
- Learn more about the CAD WALK project at http://cadwalk.eu
- Contribute to the CAD WALK database by emailing me at *brian.booth@uantwerpen.be*

Data Collection



- Individuals walked over calibrated footscan® pressure-sensing plates (rs scan, Paal, Belgium)
- A $0.5\ m$ plate (cyan) measured plantar pressures
- A $1.5\ m$ plate (red) measured 2 footsteps for walking speed estimation ($speed = distance/time$)
- Spatial Resolution (sensor size): $7.62\ mm \times 5.08\ mm$.

- Measurements saved in NIfTI format.
- Collected metadata includes:
  - Age, Height, Shoe Size, Sex (self-reported)
  - Weight (measured)
  - Handedness and Footedness (Waterloo questionnaires) https://doi.org/10.1016/S0028-3932(97)00107-3
- For patient datasets, collected clinical data includes:
  - Foot Function Index Scores (FFI-5pt) http://www.jrheum.org/content/29/5/1023.long
  - Manchester-Oxford Foot Questionnaire Scores https://dx.doi.org/10.1302/2046-3758.24.2000147

Available Datasets

Hallux Valgus Patients (see left)

- 50 individuals
- 8-15 measurements per foot
- Recorded at 200 Hz

Healthy Controls (see below)

- 55 individuals
- 24 measurements per foot
- Recorded at 500 Hz