Millen James Theophilus

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Personal Information

A doctoral fellow and academic with a research interest in human biomechanics, digital health, and wearable technology. Currently, I am a final year Marie Curie PhD Researcher at Loughborough University and seek to progress my career in research and innovation.

Education

Jan. 2024 – Current (Estimated: Jan. 2027)

Doctor of Philosophy (Focus: Wearable Technology)
Loughborough University, UK

- Three year program (full-time)

Project Title : Evaluating, Standardising, and Harmonising Accelerometer-based Measurement of Human Movement Behaviours

- Supervisors : **Prof. Dale Esliger, Dr Andrew Kingsnorth, Prof. Lauren Sherar**
- This PhD seeks to validate and benchmark wearable devices and algorithms for the accurate assessment of 24-hour movement behaviours - physical activity, sedentary behaviour, and sleep. The research work included (not exclusive): evidence synthesis, publishing and reviewing scientific articles, wearable technology, developing and validating prediction models, and performing cardio-pulmonary exercise testing safely on participants.

Oct. 2022 – Oct. 2023

Master of Science (Research) (Sport Biomechanics)
Loughborough University, UK

- One year program (full-time). Relevant modules include 'Core Biomechanics', 'Neuromuscular Physiology', 'Theories and Methods of Analysis in Biomechanics', and 'Developing Computer Models for Sports Biomechanics', where laboratory based work was done using 3D motion capture and MATLAB was used for the analyses and simulation of computer models.
- Program mark: 75.3/100 (Distinction - highest award for UK MSc.)

Thesis Topic : Neuromuscular and sensorimotor balance adaptations to conventional and ballistic resistance training in postmenopausal women.

- Supervisor : **Prof. Jonathan Folland**

July 2018 – July 2022

Bachelor of Science (Exercise and Sports Sciences)
Manipal Academy of Higher Education (MAHE), India

- Four years program. Relevant modules include 'Anatomy', 'Physiology', 'Exercise Physiology', 'Athletic Injury Prevention', 'Human Movement Studies', and 'Strength and Conditioning'.
- Cumulative GPA: 9.11/10.0
- **Award:** First Rank in first year (2019)

Publications and Scholarly Work

Journal articles (submitted, under peer-review)

- *Criterion validity and transparency of accelerometer-based methods for 24-hour movement behaviour assessment: a scoping review with meta-regression.* Manuscript under review. Preregistration.
- *Standardising behavioural health data for interoperable human behaviour measurement.* Manuscript under review. COEL v2.0 repository.

Book chapters

- *Device-based Measurement of Physical Activity.* Forthcoming in *Routledge Handbook of Physical Activity and Health*. ISBN 978-1-032-94308-4. Details.

Other scholarly work

- SCOPE-MOVE (evidence explorer); TRAC-MOVE (reporting resource); COEL v2.0 (interoperable behavioural data resource).

Professional Experience

Jan. 2025 - Current (Estimated: Jan. 2027)

MSCA Network Fellow
Learning Network for Advanced Behavioural Data-Analysis (LABDA), Loughborough University, UK

Role: Research Fellow
The MSCA Doctoral Network is an EU-funded project under Horizon Europe that brings together 12 PhD fellows across 5 countries as a multidisciplinary team to work on an open-source toolbox for the advanced data analysis of human movement behaviours recorded by wearable technologies. https://labda-project.eu/

Oct. 2025 - Dec. 2025

Secondment
ActivInsights, Kimbolton, UK

Role: Researcher
I worked together with Joss Lanford, CTO of ActivInsights, on Semantic Web technologies, systems planning, and contributing to open-source R packages for raw accelerometer data processing aligning with COEL v2.0, a data standard for interoperable behavioural health data.

Jan. 2022 - July 2022

Undergraduate Internship
Centre for Sports Sciences Medicine and Research, MAHE, India

Role: Student intern (training)
Completed cumulative of 480 hours of five job roles fulfilling different responsibilities, including related to human movement science, athletic training and injury prevention, exercise is medicine awareness, strength and conditioning, and exercise physiology testing and exercise prescription.

Teaching Experience

MSc Sports Management
Loughborough University, UK | October 2026

- Delivered a two-hour lecture on “Commercial vs research wearable technology”, with four hours of preparation.

MSc Physical Activity and Nutrition for Public Health
Loughborough University, UK | October–December 2026

- Contributed to the design and development of a lecture and practical session on “Device-based movement behaviour analysis” and “Standardisation of assessment”. Delivery is scheduled for November and December 2026.

Skills and Competencies

- Programming languages - C++, R, MATLAB, and Python.
- Query languages - SPARQL and RDF.
- Simulation modelling and signal processing on MATLAB Simscape.
- Laboratory testing and analyses using 3D motion capture (Vicon and Qualisys), force plates (Kistler and AMTI), surface electromyography, isometric and isokinetic dynamometers, ultrasound imaging, magnetic resonance imaging, indirect calorimetry, cardio-pulmonary exercise testing, and wearable technologies.
- Processing and predictive modelling of wearable sensor data, including calibration, filtering, feature extraction, and validation.
- Evidence synthesis using scoping review methods, systematic data extraction, meta-analysis, and meta-regression.
- Development of open-source research tools and interoperable behavioural health data resources.

Notable Courses

Sept. 2025 | **Machine Learning of Wearables in Large Scale Biomedical Studies**
Jesus College, University of Oxford

April 2025 | **Python for Scientific Computing and Artificial Intelligence**
Loughborough University

March 2025 | **A Short Introduction to Method Verification and Validation**
National Physical Laboratory, UK

References

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