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Machine Learning on Health Data from Wearables

University of Southampton > Faculty of Engineering and Physical Sciences

☐ Dr Zhiwu Huang ☐ Friday, October 31, 2025
☐ Competition Funded PhD Project (Students Worldwide)

Southampton United Kingdom Artificial Intelligence Bioinformatics Computer Vision

Machine Learning

About the Project

PhDs

Supervisory Team: Dr Zhiwu Huang, Dr Kate Farrahi

This PhD project focuses on developing advanced machine learning methods to transform wearable biosignal data, like heart rate, activity levels, and sleep patterns, into actionable health insights. With wearable technology collecting vast amounts of health data, this project aims to create algorithms that can predict health events, deliver personalized recommendations, and ultimately guide users toward healthier lifestyles.

The successful candidate will work on critical challenges, including data heterogeneity from various biosignal sources, real-time processing for immediate insights, and personalization to accommodate individual health variations. Methods will include multimodal machine learning for integrating diverse datasets, edge computing for efficient real-time analysis, and adaptive modeling to tailor insights to each user.

forefront of digital healthcare research, contributing to the creation of impactful, user-centered health monitoring solutions. Research directions may include federated learning to ensure user privacy, interpretability methods to enhance trust in machine learning models, and collaborations with health and technology experts for broader industry impact.

Joining this project provides an opportunity to work within a multidisciplinary team at the

This project is ideal for candidates passionate about wearable health technology, machine learning, and personalized healthcare. Outcomes will contribute to better disease prediction, improved health management, and more responsive healthcare in a digital era.

Entry Requirements

You must have a UK 2:1 honours degree, or its international equivalent, with a strong foundation in mathematics.

You should have programming skills, and a passion for research.

Experience with machine learning, computer vision, or healthcare technology will be beneficial.

How To Apply

Apply online: Search for a Postgraduate Programme of Study (soton.ac.uk).

You need to:

• choose programme type (research), 2025/26, Faculty of Engineering and Physical Sciences

please select if you will be full time or part time

• choose the relevant PhD in Computer Science

• add name of the supervisor in Section 2

Applications should include:

degree transcripts to date

• CV (resumé)

research proposal

· Cv (resume)

• 2 reference letters

Funding Notes

We offer a range of funding opportunities for both UK and international students. Horizon Europe fee waivers automatically cover the difference between overseas and UK fees for qualifying students.

Competition-based Presidential Bursaries from the University cover the difference between overseas and UK fees for top-ranked applicants.

Competition-based studentships offered by our schools typically cover UK-level tuition fees and a stipend for living costs (minimum of £19,237 in 2024-25) for top-ranked applicants.

Funding will be awarded on a rolling basis, so apply early for the best opportunity to be considered.

References

First name

https://www.southampton.ac.uk/people/62bxzm/doctor-zhiwu-huang https://www.southampton.ac.uk/people/5xkhzr/doctor-kate-farrahi

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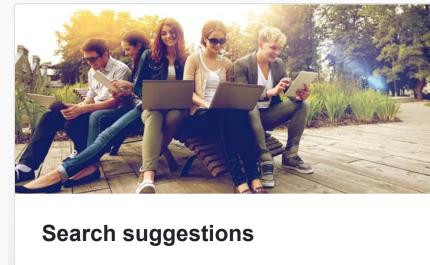
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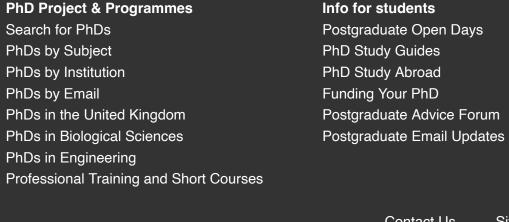
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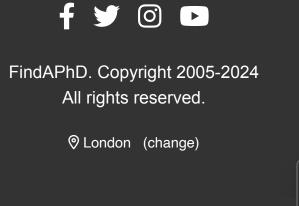
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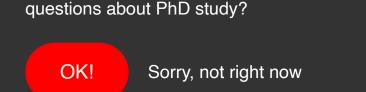




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