

CAREER OVERVIEW AND OBJECTIVES

I conduct research on intelligent home environments that integrate computer vision, embedded AI, and human–computer interaction to support independent living and ageing in place. My work spans human activity recognition, user acceptance of ambient assisted living technologies, and occupant-centred control for energy-efficient home management. Across these directions, I focus on developing adaptive, privacy-preserving, and sustainable systems that promote user trust and comfort.

EDUCATION

- Aston University:** Ph.D. in Computer Science
 - Aston University:** Postgraduate Certificate Learning and Teaching in Higher Education (PGCert)
 - Aston University:** Introduction to Learning and Teaching Practice in Higher Education (ILTP)
 - Zhejiang University:** Master of Engineering in Mechatronic Engineering
 - Liaoning University of Technology:** Bachelor of Engineering in Electronics Information Engineering
- Oct. 2022 – Sept. 2025

Oct. 2023 – Nov. 2024

March 2023 – Sept. 2023

2018 – 2021

2014 – 2018

PROFESSIONAL EXPERIENCE

- Lecturer in AI and Data Science:** University of Hull

June. 2025 – Present

 - Module leader for Programming for AI and Data Science, coordinating assessments and teaching materials.
 - Develop and deliver innovative and inclusive teaching resources that bridge theory and practice.
 - Supervise postgraduate dissertation projects, guiding students through the research process from topic selection to completion.
 - Serve as a personal tutor, offering academic and pastoral support that contributes positively to student wellbeing.
- Lecturer in Computing:** Ulster University (QA Higher Education)

Jan. 2025. – Nov. 2025

 - Teach and support learning in computer science–related subjects.
 - Provide guidance, support and tutorship for students.
 - Supervise postgraduate dissertation projects, guiding students through the research process from topic selection to completion.
- Postgraduate Teaching Assistant:** Aston University

Oct. 2022 – Sept. 2025

 - Delivered tutorials and practical sessions across computing science modules, including Software Engineering, Data Mining, and Machine Learning.
 - Assessed coursework, exams, and projects, providing detailed, constructive feedback to enhance student learning
 - Provided academic support through one-to-one and group sessions.
 - Supervise postgraduate dissertation projects, guiding students through the research process from topic selection to completion.
- Research Assistant:** The Hong Kong Polytechnic University

Nov. 2021 – July 2022

I Worked on the project "*Human-Centred Smart and Sustainable Building Management System.*" The roles included:

 - Research:** Developed personalised and generalised thermal comfort models using computer vision to predict occupant thermal comfort levels.

- **Hardware Procurement:** Managed procurement of devices, evaluating options and ensuring cost-effective, timely delivery.
- **Research Outputs:** Contributed to high-quality publications addressing energy efficiency and thermal comfort for occupants.
- **Administration:** I worked alongside the PI for the overall management of the research group.
- **Research group website:** I designed and managed the research group's website (<https://ibeems-lee.com/>)

Research Assistant: Westlake University

June 2021 – Nov. 2021

I worked on the project "*Ecosystem Monitoring Project*" at Westlake University. My roles included:

- **Hardware Development:** I designed and developed electronic hardware components for an autonomous camera system to monitor agrobiodiversity.
- **Procurement Management:** I managed the procurement of devices, coordinating with vendors to ensure cost-effective and timely delivery.
- **Field Testing Support:** I collaborated with field testers to integrate and validate the system in real-world environments.
- **Team Collaboration:** I worked with multidisciplinary teams, including software designers and AutoCAD specialists, to deliver a comprehensive solution.
- **Research Contributions:** Contributed to research publication on Embedded vision cameras for terrestrial biodiversity monitoring.

PROFESSIONAL CERTIFICATION

- **AdvanceHE:** Fellowship of the Higher Education Academy (FHEA) Nov. 2024
- **AdvanceHE:** Associate Fellow of the Higher Education Academy (AFHEA) Sept. 2023

PUBLICATIONS

Selected Publications (For full list, kindly visit: <https://gbouna.github.io/publications/>)

1. Action Recognition in Real-World Ambient Assisted Living Environment.
Vincent Gbouna Zakka, Zhuangzhuang Dai, Luis J. Manso.
Journal of Big Data Mining and Analytics: <https://doi.org/10.26599/BDMA.2025.9020003>
2. Sensors, Techniques and Future Trends of Human Engagement Enabled Applications: A Review.
Zhuangzhuang Dai, Vincent Gbouna Zakka, Luis J. Manso, Martin Rudorfer, Ulysses Bernardet, Johanna Zumer, Manolya Kavakli-Thorne
Journal of Algorithms: <https://doi.org/10.3390/a17120560>
3. Hierarchical Temporal Convolution Network: Towards Privacy-Centric Activity Recognition.
Vincent Gbouna Zakka, Zhuangzhuang Dai, Luis J. Manso.
16th International Conference on Ubiquitous Computing and Ambient Intelligence:
https://doi.org/10.1007/978-3-031-77571-0_33
4. Eyes on nature: Embedded vision cameras for terrestrial biodiversity monitoring.
Darras, Kevin; Balle, Marcel; Xu, Wenxiu; Yan, Yang; Zakka Gbouna, Vincent; Toletto, Manuel; Sheng, Dong; Lin, Wei; Zhang, Boyu; Lan, Zhenzhong; Fupeng, Li; Wanger, Thomas.
Method in Ecology: <https://doi.org/10.1111/2041-210X.14436>
5. Action Recognition for Privacy-Preserving Ambient Assisted Living.
Vincent Gbouna Zakka, Zhuangzhuang Dai, Luis J. Manso.
International Conference on AI in Healthcare: https://doi.org/10.1007/978-3-031-67285-9_15
(Best Paper Award)
6. Non-invasive vision-based personal comfort model using thermographic images and deep learning.
Vincent Gbouna Zakka, Minhyun Lee, Ruxiaoxiao Zhang, Lijie Huang, Seunghoon Jung, Taehoon Hong.

Automation in Construction: <https://doi.org/10.1016/j.autcon.2024.105811>

7. A generalized thermal comfort model using thermographic images and compact convolutional transformers Towards scalable and adaptive occupant comfort optimization.

Vincent Gbouna Zakka, Minhyun Lee.

Building and Environment: <https://doi.org/10.1016/j.buildenv.2024.112118>

8. User-interactive robot skin with large-area scalability for safer and natural human-robot collaboration in future telehealthcare.

Zakka Vincent Gbouna, Gaoyang Pang, Geng Yang, Zeyang Hou, Honghao Lv, Zhangwei Yu, Zhibo Pang.

IEEE Journal of Biomedical and Health Informatics: <https://doi.org/10.1109/JBHI.2021.3082563>

(Featured on Cover Paper)

AWARDS

- **Best Paper Runner-Up:** International Conference on AI in Healthcare 2024
- **Best Paper Award:** 22nd International Conference on Construction Applications of Virtual Reality 2022
- **UK Research and Innovation (UKRI) PhD Studentship:** Fully funded doctoral research in Human activity analysis in smart environments , awarded by UKRI. 2022–Present
- **F.C.T Scholarship Board:** Ministerial Special Scholarship Award: Award of Excellence 2018
- **Liaoning University of Technology:** Best Student in Electronic and Information Engineering Department 2016/2017 Academic Year
- **Liaoning University of Technology:** Second Best Student in Electronic and Information Engineering Department 2015/2016 Academic Year
- **Liaoning University of Technology:** Second Best Student in Electronic and Information Engineering Department 2014/2015 Academic Year
- **F.C.T Scholarship Board:** Best Indigene Student in West African Senior School Certificate Examination 2013

PROFESSIONAL SERVICE

Peer Reviewing

- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2024)
- IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2025)
- Proceedings of Machine Learning Research
- IEEE 33rd International Symposium on Industrial Electronics (ISIE 2024)

Organising Committee

The Third UK AI Conference 2025 ([Index](#) | [The Third UK AI Conference 2025](#))

Editorial Role

Editor, UK AI Proceedings in Proceedings of Machine Learning Research (<https://proceedings.mlr.press/v295/>)

RESEARCH TALKS

- **Guest Lecture for Deep Learning module (Level 7).**
Computer Vision for Ambient Assisted Living: A Practical Perspective
- **16th International Conference on Ubiquitous Computing and Ambient Intelligence (UCAmI 2024), Belfast, UK.**
Hierarchical Temporal Convolution Network: Towards Privacy-Centric Activity Recognition.
- **International Conference on AI in Healthcare (AliH 2024), Swansea, UK.**
Action Recognition for Privacy-Preserving Ambient Assisted Living.
- **Aston Centre for Artificial Intelligence Research and Application (ACAIRA), 2024, Aston University.**
Temporal Decoupling Graph Depthwise Separable Convolution Network (TD-GDSCN)

- **International Conference on Construction Applications of Virtual Reality (CONVR 2022), Seoul, South Korea.**
An Integrated Design of Energy and Indoor Environmental Quality System for Effective Building Performance Management.
- **International Conference on Intelligent Robotics and Applications (ICIRA 2021), Yantai, China.**
IoT-Enabled Robot Skin System for Enhancement of Safe Human-Robot Collaboration.