

# Bucher Sahyouni

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## PROFILE

Doctoral researcher in Artificial Intelligence at the University of Surrey, currently in the final thesis write-up stage. Research focuses on recommender systems, multimodal and sequential learning, fairness-aware representation learning, optimisation, and privacy-preserving machine learning. Proven record of designing novel ML methods, running rigorous experiments, and communicating findings through four arXiv papers and reviewing for SIGIR, AAAI, ICML, ICLR, and RecSys. First-class MEng in Electronic Engineering with strong Python/C++ foundations. Seeking machine learning, quantitative research, data science, and broader technology roles.

## TECHNICAL SKILLS

**Programming:** Python, C/C++, MATLAB

**ML / Research:** PyTorch, recommender systems, multimodal learning, sequential modelling, contrastive learning, fair representation learning, optimisation, model evaluation, experimental design

**Technical:** LaTeX, Microsoft Office, technical writing, literature review, research communication

**Professional:** Problem solving, stakeholder communication, teamwork, commercial awareness

## RESEARCH EXPERIENCE

**University of Surrey — PhD Researcher in Artificial Intelligence | Oct 2022 – Present**

- Conduct EPSRC-funded doctoral research on architecture and objective design in recommender systems, spanning multimodal and sequential recommendation, fair representation learning, optimisation, learning loss functions and robust evaluation.
- Designed and evaluated novel machine learning methods, with work reporting up to 33.5% gains over strong multimodal/sequential baselines, up to 44.1% fairness improvement on equalized odds, and stronger out-of-distribution robustness in recommender systems.
- Lead the end-to-end research workflow including literature review, problem formulation, implementation, experimentation, ablation studies, analysis, visualisation, and paper writing.
- Served as reviewer for SIGIR, AAAI, ICML, ICLR, and RecSys from 2024 to 2026.

## PROFESSIONAL EXPERIENCE

**Gulf Conferences Ltd — IT and Sales Associate | Jun 2019 – Present**

- Lead coordination across website, social media, video, and graphics activity, while helping set up and maintain network infrastructure for staff.
- Provide hands-on IT support to staff, including user support, system troubleshooting, data access, and regular backups.
- Organise virtual events and resolve software issues to support smooth delivery and a reliable user experience.
- Support client-facing sales activity and university relationships, combining technical support with commercial communication.

## EDUCATION

**University of Surrey — Artificial Intelligence, PhD (final thesis write-up stage) — EPSRC funded | Oct 2022 – Present**

Thesis: Architecture and Objective Design for Robust Recommendation under Sparse Implicit Feedback. Supervisors: Prof Simon Hadfield, Dr Matthew Vowels and Prof Liqun Chen.

**University of Surrey — MEng (Hons) Electronic Engineering with Nanotechnology — First Class | Sep 2019 – Jun 2022**

Selected modules: Computer Algorithms and Architecture, C++ and Object-Oriented Design, Circuits, Control and Communications, Semiconductor Devices and Optoelectronics, Renewable Energy Technologies. Project: Novel Design of Capacitive Tactile Sensor and Velostat Evaluation.

**University of York — Electronic Engineering with Nanotechnology — Year 1, First Class (93%) | Sep 2018 – Jun 2019**

## SELECTED PUBLICATIONS

- Differential Adjusted Parity for Learning Fair Representations, arXiv:2502.09765. Accepted at ICLR AFAA Workshop 2026.
- DSL: Understanding and Improving Softmax Recommender Systems with Competition-Aware Scaling, arXiv:2602.07206.
- Multimodal Enhancement of Sequential Recommendation, arXiv:2602.07207.
- Sequences as Nodes for Contrastive Multimodal Graph Recommendation, arXiv:2602.07208.

## **LANGUAGES**

English, Arabic