

# Emilian Radoi

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## Education

### The University of Edinburgh – PhD Computer Science 2012 – 2017

- Doctor of Philosophy - Intelligent Systems and their Applications (Informatics)
- Conducted research on low-power wireless data upload solutions for long-term tracking of mobile entities and characterising their contexts using wireless sensors.
- Was part of two European projects (FP7): PLANET (257649), HOBNET (257466).

### The University of Edinburgh – MSc Computer Science 2010 – 2011

- Computer Science Master's Degree - Computer Systems and Software Engineering
- Awarded Master's with Distinction
- Dissertation: "Performance Evaluation of Routing Protocols in Lossy Links for Smart Building Networks". Investigated the performance of the RPL routing protocol in IPv6 low-power wireless area networks (6lowPAN).

### University Politehnica of Bucharest – BEng Computer Science 2006 – 2010

- Computer Science Bachelor's of Engineering Degree - Computer Systems Architecture
- Undergraduate Project: "Optimization techniques for MPLS VPN layer 3 tunnels". Performed performance analysis of MPLS VPN domains, optimized tunnel convergence under various fault tolerance and redundancy scenarios, and implemented traffic engineering techniques.

## Work experience

### Associate Professor – University Politehnica of Bucharest Jun 2023 – Present

**Research Interests:** vision-based context awareness, knowledge transfer across sensing modalities, multimodal deep learning systems

**Teaching:** Performance Evaluation (4<sup>th</sup> year), Startup Engineering (Masters 1<sup>st</sup> year), Datascience in Medicine (4<sup>th</sup> year).

### Assistant Professor (Lecturer) – University Politehnica of Bucharest Jan 2018 – Jun 2023

**Teaching:** Performance Evaluation, Startup Engineering, Local Networks tutorials, Introduction to Computer Security tutorials.

### Teaching Assistant – University Politehnica of Bucharest Oct 2016 – Dec 2017

The same courses as above: Performance Evaluation, Startup Engineering, Local Networks, Introduction to Computer Security.

### Founder – Medic Chat Jan 2017 – Present

Medic Chat ([www.medicchat.ro](http://www.medicchat.ro)) is a telemedicine platform providing online medical consultations. Developed within the Innovation Labs startup accelerator and the Y Combinator Startup School. The platform currently has over 300K users and 700 doctors.

### Teaching Assistant - The University of Edinburgh Sep 2015 – Jul 2016

System Level Integration Practical (SLIP), Human Computer Interaction (HCI).

### Managing Director - Digicore Systems 01.07.2013 – 28.02.2015

**Funding:** Secured funding from the Scottish Informatics & Computer Science Alliance and the UK Trade & Investment, and participated in two startup accelerator programmes: SICSA Elevate (2013) and Entrepreneurial Spark (2014).

**Projects:** **EdenApp** (teaching tool for architecture students), **HikeMeUp** (Android UI for a mobile advertising platform), **SensAir** (air pollution monitoring system), **Car rental comparison engine** UI Demo.

### Research Associate - The University of Edinburgh 01.09.2011 – 29.02.2012

Participated in two EU-funded research projects, HOBNET and PLANET. Responsibilities included designing and evaluating routing protocols for mobile ad hoc wireless sensor networks within a simulation environment for HOBNET, and implementing a tree-based data collection protocol on a custom-designed platform with a 2.4 GHz radio for PLANET. Engagement with these projects continued throughout my PhD.

## Projects

### **HRIA (SMIS code/ID: 334906)**

**May 2025 – Present**

The Romanian Hub for Artificial Intelligence is carried out within the Smart Growth, Digitization and Financial Instruments Program 2021-2027 (PoCIDIF).

### **MATCHMED (ID: 420246344)**

**Nov 2024 – Present**

Development of search techniques for matching medical information.

### **InsureAI (SMIS code/ID: 142909)**

**Nov 2022 – Dec 2023**

The project researched modern machine learning-based methods to solve the problem of automatic damage detection and prediction of the related costs for vehicles.

### **ATLAS (17PCCDI/2018)**

**May 2018 – Sep 2020**

My focus in this project was on people localisation using body position estimation and smart video cameras.

### **PLANET ICT FP7 (257649)**

**Sep 2011 – Dec 2014**

The PLANET objective consisted of developing a platform for the deployment, management and maintenance of heterogeneous, large-scale systems. Application domains were environmental monitoring in the Donana National Park in Spain and intelligent airfield scenarios in ATLAS.

### **HOBNET ICT FP7 (257466)**

**Sep 2011 – Jul 2013**

The HOBNET objective was to ease and maximise the use of FIRE platforms by multidisciplinary developers of Future Internet applications focused on automation and energy efficiency for smart/green buildings. HOBNET addressed algorithmic, networking and application development aspects of Future Internet systems of tiny embedded devices.

## Awards

- Third Prize Best Paper Award - BioNLP, ACL (2025)
- **ANIS Grant** (€5,000) - Artificial Intelligence & Machine Learning (2021)
- **Centre for Research in Computing (CRC) Research Grant** (€18,000); Proposal: "Towards a Ubiquitous Skeleton-Based Movement and Behaviour Tracking System" (2021)
- **Best abstract award** for CSE (Complex Systems Engineering) at the SICSA PhD Conference (2014)
- Winner of the **UKTI Sirius Programme** (total £36,000) for graduate entrepreneurs (2014)
- Winner of the **SICSA Elevate grant** (total £9,000) to explore the opportunity to build a startup (2013)
- **1<sup>st</sup> Prize – Energy Micro Design Contest** (\$2,000); International competition organised by a leading wireless chip manufacturer - Silicon Labs; Project: "Long-term wildlife monitoring using wireless sensor networks" (2013)
- **PhD Scholarship** for 3 years from two FP7 projects (2012)
- **Student Scientific Communication Sessions** during undergraduate studies:
  - **1<sup>st</sup> Mention** "Optimization techniques for MPLS VPN layer 3 tunnels" (2010)
  - **2<sup>nd</sup> Prize** "Computer Assisted Logic Minimization - Survey of the Open-Source Applications" (2007)
  - **1<sup>st</sup> Mention** "Magnetic Levitation" (2006)

## Publications

- "On Model and Data Scaling for Skeleton-Based Self-Supervised Gait Recognition", AAAI 2026.
- "The Strawberry Problem: Emergence of Character-level Understanding in Tokenized Language Models", EMNLP 2025.
- "Dr.Copilot: A Multi-Agent Prompt Optimized Assistant for Improving Patient-Doctor Communication in Romanian", EMNLP 2025.
- "RoMath: A Mathematical Reasoning Benchmark in Romanian", MathNLP, EMNLP 2025.
- "A Retrieval-Based Approach to Medical Procedure Matching in Romanian", BioNLP, ACL 2025.
- "Personalized In-Store Advertising using Deep Learning for Face Analysis and Gaze Estimation", CSCS 2025, IEEE.
- "Romanian Speech-to-Text Transcription for Medical Applications", ICCP 2024, IEEE.
- "The Paradox of Motion: Evidence for Spurious Correlations in Skeleton-based Gait Recognition Models", FG 2024, IEEE.
- "GaitPT: Gait Pyramid Transformer for Skeleton-based Gait Recognition", FG 2024, IEEE.
- "CrossGaze: A Strong Method for 3D Gaze Estimation in the Wild", FG 2024, IEEE.
- "Aligning Actions and Walking to LLM-Generated Textual Descriptions", FG 2024, IEEE.



- “Gait Recognition from Highly Compressed Videos”, FG 2024, IEEE.
- “PsyMo: A Dataset for Estimating Self-Reported Psychological Traits from Gait”, WACV 2024, IEEE.
- “Car Full View Dataset: Fine-Grained Predictions of Car Orientation from Images”, Electronics 2023.
- “GaitMorph: Transforming Gait by Optimally Transporting Discrete Codes”, IJCB 2023, IEEE.
- “Exploring Self-Supervised Vision Transformers for Gait Recognition in the Wild”, Sensors 2023.
- “Learning Gait Representations with Noisy Multi-Task Learning”, Sensors 2022.
- “Bootstrapping Road Sign Detection for Self-Driving Cars using Weakly-Supervised Learning”, RoEduNet 2022, IEEE.
- “Image-based Fruit Recognition and Classification”, RoEduNet 2022, IEEE.
- “Scalable Deployments for Real-Time AI Video Stream Processing”, RoEduNet 2022, IEEE.
- “From Face to Gait: Weakly-Supervised Learning of Gender Information from Walking Patterns”, FG 2021, IEEE.
- “Wildgait: Learning gait representations from raw surveillance streams”, Sensors 2021.
- “A Comprehensive Survey of Indoor Localization Methods Based on Computer Vision”, Sensors 2020.
- “Multi-Task Learning of Confounding Factors in Pose-Based Gait Recognition”, RoEduNet 2020, IEEE.
- “Autonomous Self-Diagnosis System”, RoEduNet 2020, IEEE.
- “Mapping Natural Language Questions to Medical Specialties”, RoEduNet 2020, IEEE.
- “CamLoc: Pedestrian Location Estimation through Body Pose Estimation on Smart Cameras”, IPIN 2019, IEEE.
- “Localization Systems Repository: A Platform for Open-source Localization Systems and Datasets”, IPIN 2019, IEEE.
- “PXNOR: Perturbative Binary Neural Network”, RoEduNet 2019, IEEE.
- “Stress Level Prediction Using Data from Wearables”, RoEduNet 2019, IEEE.
- “Performance Evaluation of the VB-TDMA Protocol for Long-term Tracking and Monitoring of Mobile Entities in the Outdoors”, Q2SWinet 2015, ACM.
- “Tracking and Monitoring Horses in the Wild using Wireless Sensor Networks”, WiMob 2015, IEEE.
- “Prospeckz-5 - A Wireless Sensor Platform for Tracking and Monitoring of Wild Horses”, DSD 2014, IEEE.
- “CoAP-Mediated Hybrid Simulation and Visualisation Environment for Specknets”, PADS 2013, ACM.
- “Evaluation of Routing Protocols for Internet-Enabled Wireless Sensor Networks”, ICWMC 2012, IARIA.