Emilian Radoi

Email: emilian.radoi@upb.ro

Education

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

- Doctor of Philosophy - Intelligent Systems and their Applications (Informatics)
- My research was focusing 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). I often was the technical point of contact for our research centre, we collaborated and coordinated remotely with other teams, and I have attended 10 general and integration meetings, gave presentations and represented the University of Edinburgh.

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

- Computer Science Master's Degree - Computer Systems and Software Engineering
- **Awarded Masters 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) and compared it to other relevant routing protocols in the SpeckSim behavioural simulator.

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". The contributions consisted of the performance analysis of MPLS VPN domains, tunnel convergence optimization in various scenarios of fault tolerance and redundancy, and the deployment of 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 (4th year), Startup Engineering (Masters 1st year), Datascience in Medicine (4th year).

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

Teaching

- **Performance Evaluation** (4th year) – lectures and tutorials - https://ocw.cs.pub.ro/courses/ep
- **Startup Engineering** (Masters 1st year) – lectures and tutorials - https://ocw.cs.pub.ro/courses/se
- **Local Networks** (3rd year) – tutorials - https://ocw.cs.pub.ro/courses/rl
- **Introduction to Computer Security** (4th year) – tutorials - https://ocw.cs.pub.ro/courses/isc

Teaching Assistant – Politehnica University 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.medic.chat) is a telemedicine platform that enables users to receive medical advice from doctors over the internet. We built the platform within the Innovation Labs startup accelerator and then in 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) – http://www.inf.ed.ac.uk/teaching/courses/slip/
- Human Computer Interaction (HCI) – http://www.inf.ed.ac.uk/teaching/courses/hci/

Managing Director - Digicore Systems **01.07.2013 – 28.02.2015**

I have experienced working in a startup environment, motivating and recruiting people, managing a small team of three people through all phases of product development, and I have gained experience with funding applications and pitching competitions.

Funding: We raised funding from the Scottish Informatics & Computer Science Aliance and the UK Trade & Investment, and were part of two startup accelerator programmes: SICSA Elevate in 2013 and Entrepreneurial Spark in 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**

This represents my initial involvement into the two EU-funded research projects (HOBNET and PLANET), being part of two teams. My responsibilities consisted in researching and developing several routing protocols for mobile ad hoc wireless sensor networks in a simulation environment for HOBNET, and implementing a tree-based data collection protocol on a custom-designed platform with a 2.4GHz radio for PLANET. My work and participation was well appreciated, and my involvement in 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) **April 2025 – 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

- **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)
- **1st 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:
  - **1st Mention** "Optimization techniques for MPLS VPN layer 3 tunnels" (2010)
  - **2nd Prize** "Computer Assisted Logic Minimization - Survey of the Open-Source Applications" (2007)
  - **1st Mention** "Magnetic Levitation" (2006)

Publications

- "A Retrieval-Based Approach to Medical Procedure Matching in Romanian", BioNLP, ACL 2025.
- "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 2024.
- “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.