



Igor Matias

PH.D. STUDENT · MASTER OF COMPUTER SCIENCE AND ENGINEERING
University of Geneva, Switzerland

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“Don’t go through life, grow through life.” - Eric Butterworth

Summary

Igor Matias is a Ph.D. student and member of the Quality of Life Lab at the Institute of Service Science of the University of Geneva, Switzerland. He completed a Master of Science degree in Computer Science and Engineering in 2020 and a Bachelor of Science degree in the same field in 2018 from the University of Beira Interior, Covilhã, Portugal. His MSc degree thesis focused on the research and implementation of Deep Learning techniques for predicting Atrial Fibrillation, applying innovative approaches based on sound and image processing methods. He received the “Outstanding Young Professional Member Award” from the Portuguese section of the IEEE in 2022, a “Certificate of Appreciation” from the Region 8 and Malta Section of IEEE in 2023, and the Medal of Merit from the Municipality of Fundão, Portugal, in 2024.

Currently, he is the Publicity Chair of the MELECON 2024 conference and the Vice-Chair of the AdHoc Committee on Educational Infrastructure at IEEE Region 8. Also, he is the current Educational Activities Coordinator in the IEEE Section of Portugal. In the past, he held several positions in many organizations, such as the Vice-President of the Students’ Union, Chief-Technology Officer of the STAR Junior Enterprise, and Chair of the IEEE Student Branch. He also was a promoter and volunteer teacher on the project entitled “Projeto Querer e Fazer,” which started in the 20th century and focused on humanitarian aid in several areas where health and education are a priority in countries of the African Continent. His research interests include Predictive Algorithms, Quality of Life, Health Technology, Artificial Intelligence, Bioinformatics, Wearable Technologies, and Human-Computer Interaction.

His doctoral research focuses on developing and testing an innovative approach to pre-diagnosis of Alzheimer’s Disease, the main cause of Dementia worldwide, by the analysis of daily-life routines, health signals, and other methods, towards a smartphone and wearables solution that can predict the condition years before the clinical diagnosis.

Website of his research project: providemus.unige.ch

Education

Université de Genève

Geneva, Switzerland

PH.D. IN INFORMATION SYSTEMS

Jan. 2021 - now

- Focusing on the development of digital biomarkers for cognitive performance fluctuations, with future brain disease early screening applications.

Universidade da Beira Interior

Covilhã, Portugal

M. SC. IN COMPUTER SCIENCE AND ENGINEERING

Sep. 2018 - Jul. 2020

- With the resulting thesis titled “ECG based Prediction Model for Cardiac-Related Diseases using Machine Learning Techniques” graded with 19/20 in the final public defense with jury.

Universidade da Beira Interior

Covilhã, Portugal

B. SC. IN COMPUTER SCIENCE AND ENGINEERING

Sep. 2014 - Jul. 2018

- With the final project titled “Intelligent Health Monitoring Bracelet” graded 18/20 in the public defense with a jury.

Awards

2024	Medal of Merit , Municipality of Fundão	Portugal
2023	Certificate of Appreciation , IEEE Region 8 and IEEE Malta Section	Malta
2022	Outstanding YP Member Award , IEEE Portugal Section	Portugal
2017	3rd place , ICT ENTREPRENEUR Entrepreneurship Academy and Business Competition	Cyprus

Languages

Native Portuguese
C2 English
B2 French, Spanish

Teaching experience

Mobile Systems and Services

Geneva, Switzerland

TEACHING ASSISTANT AT THE UNIVERSITÈ DE GENÈVE

2024 - now

- Teaching the steps from brainstorming until the final mobile prototype of a solution designed to solve a predefined daily-life problem. Guiding the students during the seminar classes.

Algorithmics and Data Management

Geneva, Switzerland

TEACHING ASSISTANT AT THE UNIVERSITÈ DE GENÈVE

2023 - now

- Teaching algorithm fundamentals in Python.

Introduction to Technology-Reported Outcomes for QoL research

Calgary, Alberta, Canada

WORKSHOP ORGANIZER AT THE ISOQOL ANNUAL CONFERENCE 2023

2023

- Teaching a basic level introduction to the why and how of using Technology-Reported Outcomes in research, which later can pave the way for clinical practice.

Executive MBA - Business Analytics

Geneva, Switzerland

TEACHING ASSISTANT AT THE UNIVERSITÈ DE GENÈVE

2023

- Executive Master of Business Administration. Teaching methods for the estimation of causality from intensive longitudinal data. Guiding the students on when, how, and why to get meaning from in-business collected data.

Services: from concept to market

Geneva, Switzerland

TEACHING ASSISTANT AT THE UNIVERSITÈ DE GENÈVE

2022 - now

- Teaching the steps from brainstorming until the physical prototype of a solution designed to solve a predefined daily-life problem. Guiding the students during the seminar classes.

Advanced Database Development

Geneva, Switzerland

TEACHING ASSISTANT AT THE UNIVERSITÈ DE GENÈVE

2021 - 2023

- Teaching about data cleaning, processing, and analyzing techniques applied to big datasets collected with connected devices. Guiding the students during the seminar classes.

Introduction to computer basics, Microsoft Office, and advanced networks

Cumura, Guinea-Bissau

TEACHER AT THE ESCOLA UNIFICADA DOM SETTIMIO ARTURO FERRAZZETTA

2017-2019

- Volunteer teaching of basic computer usage skills (beginner and intermediate level), introduction to Microsoft Office tools (beginner to advanced level), and advanced computer network management. Teaching school professors and technicians.

Summer School "Experimental Interaction Design"

Tallinn, Estonia

TEACHER AT THE TALLINN UNIVERSITY

2016

- Teaching about fast ways to prototype technology-based Ambient Assisted Living solutions. Guiding the students during a full week course on C coding, debugging, Arduino assembly, and soldering skills.

CodeWeek EU-UBI "Ignite Your Code"

Covilhã, Portugal

TEACHER AT THE UNIVERSIDADE DA BEIRA INTERIOR

2016

- Teaching about project planning, prototyping, C coding, debugging, and Arduino assembly. Guiding the students during a half-day course on Arduino assembly and coding.

Publications

PEER-REVIEWED JOURNAL ARTICLES

2022 **What possibly affects nighttime heart rate? Conclusions from N-of-1 observational data**

Digital Health

1st author

2021 **Prediction of Atrial Fibrillation using artificial intelligence on Electrocardiograms: A systematic review**

Computer Science Review

1st author

CONFERENCE PROCEEDINGS ARTICLES

- 2024 **Modelling Users for User Modelling: Dynamic Personas for Improved Personalisation in Digital Behaviour Change**
ACM Conference on User Modeling, Adaptation and Personalization (UMAP) *1st author*
- 2024 **Behaviour Models-Enriched User Personas for Digital Behaviour Change Interventions**
International Conference on PErvasive Technologies Related to Assistive Environments (PETRA)
- 2022 **Dejà vu: Recurrent Neural Networks for health wearables data forecast**
IEEE International Conference on Machine Learning and Applications (ICMLA) *1st author*
- 2022 **Behavioral Data Categorization for Transformers-based Models in Digital Health**
IEEE International Conference on Biomedical and Health Informatics (BHI-BSN)
- 2018 **Scaffolding students on connecting STEM and interaction design: Case study in Tallinn University Summer School**
IEEE Global Engineering Education Conference (EDUCON) *1st author*
- 2018 **Towards a Fully Automated Bracelet for Health Emergency Solution**
International Conference on Internet of Things, Big Data and Security (IoTBDs) *1st author*

THESIS

- 2020 **ECG based Prediction Model for Cardiac-Related Diseases using Machine Learning Techniques**
Universidade da Beira Interior *1st author*

CONFERENCE POSTERS

- 2024 **Providemus alz: Paving the way towards a ubiquitous and passive screening of Alzheimer's disease**
Annual Conference of the Alzheimer's Disease International (ADI) *1st author*
- 2022 **Physical Activity may affect Sleep unexpectedly. Results from small data**
Annual Conference of the International Society for Quality of Life Research (ISOQOL) *1st author*
- 2022 **Providemus alz: Giving you the power to foresee Alzheimer's disease effortlessly**
Data Science Day of the University of Geneva *1st author*
- 2022 **Fighting Alzheimer's Disease Effortlessly**
Winter School of the Conférence Universitaire de Suisse Occidentale (CUSO) *1st author*

Open data repositories

Stress reports (patient and peer/proxy), application usage, touches buffered and user activity collected with a Smartphone *CC BY 4.0*
[HTTPS://DOI.ORG/10/GT37W9](https://doi.org/10/gt37w9) *Jul. 2024*

Physical Activity, Heart Rate, and Sleep data collected with a Smartwatch (N=12) *CC BY 4.0*
[HTTPS://DOI.ORG/10/GQZVPP](https://doi.org/10/gqzvpp) *Oct. 2022*

Tutoring

MASTER'S DEGREE

- 2023 **Use of Personal Mobile Technologies for Peer-based Assessment of Stress**
Antoine Bellanger

Academic talks

Light at the end of the copper wire: a tentative clarification of TechOs, TechROs, Digital COAs, and Digital Biomarkers *Calgary, Alberta, Canada*
ISOQOL ANNUAL CONFERENCE 2023 *Oct. 2023*

Data overdose: side effects and metabolism of big data in the 21st century *Oklahoma City, USA*
THE UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER'S SESSION "AI AND BIG DATA IN HEALTHCARE" *Feb. 2023*

Technology: your body's seismometer

UNIGE'S DATA SCIENCE DAY ROUND TABLE "BEYOND SDGS: MEASURING AND FORECASTING FOR TAKING ACTION"

Geneva, Switzerland

Aug. 2021

Co-calibrating Short Term, Mixed-Methods Based Momentary Assessments for Physical and Psychological Outcomes with Long Term Quality of Life Outcomes in Older Adults: An Evaluation of the coQoL Method

SOCIETY FOR AMBULATORY ASSESSMENT CONFERENCE

Zurich, Switzerland

Jul. 2021

"Know You (Self) Better": N-of-1 Based Self-Examination Using Wearables And Self-Reported Behaviors For An Improved Well-Being

DATA SCIENCE CLINICS

Geneva, Switzerland

Apr. 2021

Media appearances

Detetar Alzheimer vinte anos antes dos primeiros sinais

SIC AND SIC NOTÍCIAS

Portugal

Mar. 2024

Inteligência artificial: "A moeda de duas faces"

FARMACÊUTICO NEWS

Portugal

Nov. 2023

O ChatGPT tomou de assalto a sociedade em quatro meses

NEWSPAPER SOL AND JORNAL I

Portugal

Apr. 2023

General public talks

Coding for a Cure: How AI is and will be unraveling the mysteries of Onco-Hematology

HEMEXCHANGE BY TAKEDA

Coimbra, Portugal

Jan. 2024

Artificial Intelligence in the digital transition

KICK-OFF OF THE DIH 4 GLOBAL AUTOMOTIVE PROJECT

Matosinhos, Portugal

Jan. 2024

Development of Artificial Intelligence around the world: potential and challenges

XVI NATIONAL CONGRESS OF THE PORTUGUESE ASSOCIATION OF HOSPITAL PHARMACISTS

Porto, Portugal

Nov. 2023

Digital Health: Health Technology and Artificial Intelligence

B-TECH CONGRESS - III CONGRESS OF TECHNOLOGICAL RESEARCH IN BUSINESS

Vitória, Espírito Santo, Brazil

Nov. 2023

O ChatGPT tomou de assalto a sociedade em quatro meses

INSTITUTO POLITÉCNICO DA GUARDA

Guarda, Portugal

May. 2023

Experience

Université de Genève

TEACHING ASSISTANT

- Teaching B.Sc., M.Sc., and MBA courses.

Geneva, Switzerland

Jan. 2021 - now

Natura IMB Hotels

BACKEND ENGINEER AND DEVELOPER

- Engineer and developer of an innovative indoor-person tracking solution applied to sports activities inside a sports hotel, working with mobile apps, RFID technology, and microsensors.

Covilhã, Portugal

May. 2018 - Dec. 2020

Human subjects' protocols clearance

Assessing Cognitive Performance Fluctuations with Personal Technologies in Different Contexts of Daily Life: A Feasibility Study

Switzerland and France

AUTHORIZATION BY THE COMMISSION CANTONALE D'ÉTHIQUE DE LA RECHERCHE (CCER), SWITZERLAND

2023

- Protocol CCER 2023-00975

mQoL-Lab: Studying the Subjective and Objective Momentary as well as Longitudinal Perception of Quality of Life in Different Contexts of Daily Life

Switzerland and France

AUTHORIZATION BY CONSEIL D'ÉTAT GENEVE (ART. 41 DE LA LIPAD) AND ACCEPTED BY THE ETHICS REVIEW BOARD OF THE UNIVERSITY OF GENEVA (CUREG), SWITZERLAND

2021

- Protocol CUREG 2020-06-13

Certifications

Human Rights and the Artificial Intelligence

Jul. 2023

GLOBAL DIGITAL HUMAN RIGHTS NETWORK

Introduction to Quality of Life and Patient-Reported Outcomes

Oct. 2022

INTERNATIONAL SOCIETY FOR QUALITY OF LIFE RESEARCH

Effective Grant Development and Writing

Mar. 2022

CONFERENCE UNIVERSITAIRE DE SUISSE OCCIDENTALE

Presentation Skills

Mar. 2022

CONFERENCE UNIVERSITAIRE DE SUISSE OCCIDENTALE

Legal aspects of research data

Jan. 2022

UNIVERSITÉ DE GENÈVE

Managing research data as a junior scientist

Nov. 2021

UNIVERSITÉ DE GENÈVE

Social and professional interaction in English

Nov. 2021

CONFERENCE UNIVERSITAIRE DE SUISSE OCCIDENTALE

English writing structure

Oct. 2021

CONFERENCE UNIVERSITAIRE DE SUISSE OCCIDENTALE

Media strategy for professional purposesMedia strategy for professional purposes

Oct. 2021

UNIVERSITÉ DE GENÈVE

Social networks, collaborative platforms and digital profiling

Oct. 2021

UNIVERSITÉ DE GENÈVE

Informed Consent

Mar. 2021

TRAINING AND RESOURCES IN RESEARCH ETHICS EVALUATION

Introduction to Research Ethics

Mar. 2021

TRAINING AND RESOURCES IN RESEARCH ETHICS EVALUATION

Research Ethics Evaluation

Mar. 2021

TRAINING AND RESOURCES IN RESEARCH ETHICS EVALUATION

Swiss National Supplement

Mar. 2021

TRAINING AND RESOURCES IN RESEARCH ETHICS EVALUATION

CCNA 1 Introduction to Networks CISCO

Nov. 2017

CISCO

English language - industrial relations

Jan. 2016

INSTITUTO DO EMPREGO E FORMAÇÃO PROFISSIONAL

Extracurricular Activity

Vice-Chair

Europe, Middle East, and Africa

IEEE REGION 8 AdHOC COMMITTEE ON EDUCATIONAL INFRASTRUCTURE

2023 - now

Educational Activities Coordinator

IEEE PORTUGAL SECTION

- Leading the organization of a series of online seminars focusing on most of the fields of IEEE.

Portugal

2022 - now

Corresponding Member

IEEE REGION 8 PROFESSIONAL AND EDUCATIONAL ACTIVITIES COMMITTEE

- Gave major contributions to the organization of a Region 8 Robot Championship and an engineering educational content promotion program, and on the reorganization of the committee website.

Europe, Middle East, and Africa

2022

Professional and Educational Activities Coordinator

IEEE PORTUGAL SECTION

- Led the organization of a series of online seminars focusing on most of the fields of IEEE.

Portugal

2020 - 2021

Volunteer

PROJETO QUERER E FAZER

- Project started in the 20th century and focused on humanitarian aid in several areas where health and education are a priority in countries of the African Continent.

Guinea-Bissau

2017 - 2020

Chief Technology Officer

STAR JUNIOR ENTERPRISE

- The first Junior Enterprise in the Portuguese Center region countryside.

Fundão, Portugal

2020

Software and Web Engineer

COVID-19 O QUE ESTA ABERTO?

- Online free platform displaying a map with the establishments open during the pandemic in Portugal.

Beira Interior, Portugal

2020

Chair

IEEE UNIVERSIDADE DA BEIRA INTERIOR STUDENT BRANCH

- Launched and chaired two international symposiums during this period.

Covilhã, Portugal

2018 - 2019

Vice President

ASSOCIAÇÃO ACADEMICA DA UNIVERSIDADE DA BEIRA INTERIOR

- The most active Students Union in the Center countryside of Portugal.

Covilhã, Portugal

2019

Chair

GOOGLE DEVELOPERS GROUP COVILHÃ

- One of the first Google Developers Groups in Portugal.

Covilhã, Portugal

2018 - 2020

Vice President

NUCLEO DE INFORMATICA DA UNIVERSIDADE DA BEIRA INTERIOR

- The oldest academic association of the Universidade da Beira Interior.

Covilhã, Portugal

2018

Volunteer Firefighter

ASSOCIAÇÃO HUMANITARIA DE BOMBEIROS VOLUNTARIOS DO FUNDÃO

- Reserve firefighter since 2017.

Fundão, Portugal

2010 - 2016

Service

- 2024 **Publicity Chair**, IEEE MELECON
- 2023 **Article reviewer**, Journal of Alzheimer's Disease
- 2023 **Article reviewer**, IEEE ICMLA
- 2023 **Article reviewer**, IEEE BHI
- 2023 **Workshop and Symposium reviewer**, ISOQOL
- 2022 **Article reviewer**, IEEE BHI-BSN
- 2020 **Article reviewer**, IEEE Access
- 2019 **Chair**, "UBIsym on Robotics and Vehicular Technologies" IEEE international symposium
- 2018 **Chair**, "UBIsym in Healthcare Engineering" IEEE international symposium
- 2017 **Article reviewer**, IEEE EDUCON

Skills

- Programming** Assembly, C, Dart, JAVA, PHP, Python, SQL
- Front-end** CSS, HTML
- Digital edition** Blender, Illustrator, InDesign, LaTeX, Photoshop

Membership

- 2016+ **IEEE**, Institute of Electrical and Electronics Engineers
- 2021+ **QoL Lab**, Quality of Life Technologies Lab
- 2022+ **ISOQOL**, International Society for Quality of Life Research
- 2024+ **LIVES**, Swiss Centre of Expertise in Life Course Research
- 2024+ **ACM**, Association for Computing Machinery
- 2017-20 **CIDB**, Centro de Investigação e Desenvolvimento da Beira