

Ferreira João Filipe

invited assistant professor



contact



Department of Electric
Engineering and Computers,
Faculty of Science &
Technology
University of Coimbra
Pinhal de Marrocos – Polo II
3030-290 Coimbra
Portugal



+351 239796628



jfilipe@isr.uc.pt



[http://www2.isr.uc.pt/
~jfilipe](http://www2.isr.uc.pt/~jfilipe)
[http://mrl.isr.uc.pt/
projects/casir](http://mrl.isr.uc.pt/projects/casir)



[https://scholar.google.
com/citations?user=
vctRINYAAAAJ](https://scholar.google.com/citations?user=vctRINYAAAAJ)



[http://www.researchgate.
net/profile/Joao_Filipe_
Ferreira/?cp=shp](http://www.researchgate.net/profile/Joao_Filipe_Ferreira/?cp=shp)



[http://coimbra.academia.
edu/FFerreira](http://coimbra.academia.edu/FFerreira)

languages

Portuguese mother
tongue
English fluency
French & Italian good

resume - short cv

João Filipe de Castro Cardoso Ferreira was born in 1973, Coimbra, Portugal (civil ID number 10056640). He is currently an Invited Assistant Professor (Professor Auxiliar Convidado) at the University of Coimbra. He received his Ph.D. in Electrical Engineering from the University of Coimbra, specialisation in Instrumentation and Control, in July 2011. He received the M.Sc. degree in Electrical Engineering from Faculty of Sciences and Technology, University of Coimbra (FCTUC), specialisation in Automation and Robotics, in January 2005, He received his Electrical Engineering B.Sc. degree (5-year course, specialisation in computers) from the same faculty, in July 2000.

His current main research interests are spread out through three broad scientific themes: Artificial Cognition, Probabilistic Modelling and Autonomous Systems. Within these themes, the following topics receive his main focus: bioinspired perception, navigation and cognition, autonomous robotics, social robotics and human-robot interaction. However, his research interests are not limited to these subjects: over the years, he has also produced contributions in medical image processing and 3D scanning. He is the **main author of the textbook "Probabilistic Approaches for Robotic Perception" (Springer STAR series)**. He is also heavily engaged in technology transfer, namely in the fields of digital electronic systems design, instrumentation and control, in close collaboration with the Laboratory of Automatics and Systems of the Instituto Pedro Nunes (IPN-LAS) and as a consultant for Wexcedo, an SME whose mission includes the development of innovative solutions for smart houses and the "internet of things".

He conducts his research as an integrated member of the Artificial Perception for Intelligent Systems and Robotics team (AP4ISR, team manager in 2016) of the Institute of Systems and Robotics (ISR), a research institute of the Electrical Engineering Department (DEEC) of the Faculty of Sciences and Technology of the University of Coimbra (FCTUC). He also frequently collaborates with the Biomedical Institute for Research in Light and Image (IBILI), of the Faculty of Medicine of the University of Coimbra. He is a staff researcher at the ISR since 1999 (integrated member since 2011), and a member of the IEEE and the IEEE Robotics and Automation Society (RAS) since 2012 (Officer in the Portuguese Chapter since 2014 and member of the Technical Committee on Cognitive Robotics, T-CORO, since 2015), the IEEE Life Sciences Community since 2013, the IEEE Systems, Man, and Cybernetics Society since 2015 and the IEEE Computational Intelligence Society since 2015.

He was a staff researcher for the FCTUC team on the European Integrated Project "Bayesian Approach to Cognitive Systems" (FP6-IST-27140), from 2006 to 2010, and a research fellow for the European Integrated Project HANDLE "Developmental pathway towards autonomy and dexterity in robot in-hand manipulation" (theme 2: Cognitive Systems, Interaction, Robotics, under grant agreement 231640) from 2010 to 2011. He is now a staff researcher for the ISR team on the European Integrated Project "BAMBI – Bottom-up Approaches to Machines dedicated to Bayesian Inference" (FET Project - FP7-ICT-2013-C), from January 2014 to December 2016.

He was the **Principal Investigator (PI)** for the FCT/COMPETE nationally funded project CASIR (Coordinated Control of Stimulus-Driven and Goal-Directed Multisensory Attention Within the Context of Social Interaction with Robots - PTDC/EEI-AUT/3010/2012), running from April 2013 to July 2015.

education

academic education

- 2011 **Doutoramento (Ph. D.)** University of Coimbra, Portugal
Electrical Engineering and Computers,
Specialisation in Instrumentation and Control
(*Summa Cum Laude*)
- 2005 **Mestrado (M. Sc.)** University of Coimbra, Portugal
Electrical Engineering and Computers,
Specialisation in Robotics and Automation
18/20 (Curricular); Very Good (Final Grade)
- 2001 **Licenciatura (B. Sc.)** University of Coimbra, Portugal
Electrical Engineering and Computers,
Specialisation in Computers
14/20, Good

education abroad

- 1978–1980 **Primary School** King's Road Primary School, Manchester, England
(1st and 2nd grades)

awards and grants

- 04/2013–06/2015 **Research Grant (Principal Investigator)** Foundation for Science & Technology (FCT)
FCOMP-01-0124-FEDER-028914,
FCT Ref. PTDC/EEI-AUT/3010/2012
72,488.00€
CASIR (Coordinated Control of Stimulus-Driven and Goal-Directed Multi-sensory Attention Within the Context of Social Interaction with Robots)
Institute of Systems and Robotics (Coimbra Pole)
University of Coimbra
- 09/2011–10/2012 **Post-Doctoral Fellowship** Foundation for Science & Technology (FCT)
SFRH/BPD/74803/2010

Institute of Systems and Robotics
Coimbra
Portugal
- 01/2006–01/2010 **Ph. D. Fellowship** Foundation for Science & Technology (FCT)
SFRH/BD/24628/2005

Department of Electrical Engineering and Computers
Faculty of Science and Technology

IBILI – Institute for Biomedical Imaging and Life Sciences
Faculty of Medicine

University of Coimbra
Coimbra
Portugal

professional experience

current position and activities

- 09/2011–Now **Invited Assistant Professor** University of Coimbra, Portugal
Department of Electrical Engineering and Computers
Faculty of Science and Technology
- *Computer Technologies* (Tecnologia dos Computadores – 450 hours, 378 alumni) – course coordinator (regente) in 2011/2012.
 - *Digital Systems Design* (Projecto de Sistemas Digitais – 45 hours, 25 alumni) – course coordinator (regente) in 2014/2015.
 - *Autonomous Robotic Systems* (Sistemas Robóticos Autónomos – Doctorate Studies course) – course coordinator (regente) in 2014/2015.
 - *Digital Systems Laboratory* (Laboratório de Sistemas Digitais – 660 hours, 325 alumni).
 - *Computer Architectures* (Arquitectura de Computadores/Sistemas de Microprocessadores – 612 hours, 487 alumni).
 - *Electrical Circuits Laboratory* (Laboratório de Electrotecnia e Circuitos – 120 hours, 64 alumni).
 - *Computer Applications for Engineering* (Aplicações Informáticas para Engenharia – 90 hours, 35 alumni).

1999–Now **Researcher (Integrated Member since 2011)** ISR-Coimbra, Portugal
Institute of Systems and Robotics
Coimbra
PORTUGAL

1999–Now **Senior Researcher (Faculty)** AP4ISR
AP4ISR
Artificial Perception for Intelligent Systems and Robotics team
Team Manager in 2016.

Institute of Systems and Robotics
Coimbra
PORTUGAL

prior teaching experience

- 02/2011–09/2011 **Invited Teaching Assistant** University of Coimbra, Portugal
Department of Electrical Engineering and Computers
Faculty of Science and Technology
- *Computer Architectures* (Arquitectura de Computadores e Sistemas de Microprocessadores – 120 hours, 92 alumni)
- 09/2010–12/2010 **Teaching Aid** University of Coimbra, Portugal
Department of Electrical Engineering and Computers

Faculty of Science and Technology

- *Digital Systems Development* (Laboratório de Sistemas Digitais)

09/2002–09/2004 **Probationary Teaching Assistant** University of Coimbra, Portugal
Department of Electrical Engineering and Computers
Faculty of Science and Technology

- *Computer Programming* (Programação de Computadores);
- *Computer Technologies* (Tecnologia dos Computadores);
- *Instrumentation and Measuring* (Instrumentação e Medidas).

09/1995–09/1996 **Basic Education Teacher** Instituto Educativo de Lordemão, Coimbra

- *Visual Education* (Educação Visual – design and crafts);
- *Visual and Technological Education* (Educação Visual e Tecnológica – design, crafts and technology).

research experience

His current main research interests are spread out through three broad scientific themes: **Artificial Cognition**, **Probabilistic Modelling** and **Autonomous Systems**. Within these themes, the following topics receive his main focus: bioinspired perception, navigation and cognition, autonomous robotics, social robotics and human-robot interaction.

However, his research interests are not limited to these subjects: over the years, he has also produced contributions in medical image processing and 3D scanning, and will most probably pursue other interesting challenges in the future.

2014–Now **Researcher** ISR-Coimbra, Portugal
BAMBI – Bottom-up Approaches to Machines dedicated to Bayesian Inference (FET Project - FP7-ICT-2013-C)

Institute of Systems and Robotics
Coimbra
Portugal

09/2011–10/2012 **Post-Doctoral Fellow** Foundation for Science & Technology (FCT)
“Multimodal Active Perception Framework Using a Bayesian Approach”

Institute of Systems and Robotics
Coimbra
Portugal

01/2010–01/2011 **Research Fellow (as M. Sc.)** ISR-Coimbra, Portugal
HANDLE (Developmental Pathway towards Autonomy and Dexterity in Robot In-Hand Manipulation) – European Project (Seventh Framework Programme FP7), theme 2: Cognitive Systems, Interaction, Robotics, grant agreement 231640

Institute of Systems and Robotics
Coimbra
Portugal

09/2007–11/2007 **Visiting Student Researcher** INRIA Rhône-Alpes, Grenoble, France
BACS (Bayesian Approach to Cognitive Systems) — Integrated Project conducted under the Thematic Priority: Information Society Technologies — Sub-topic: Cognitive Systems — of the 6th Framework Program of the European Commission

INRIA Rhône-Alpes (**supervisors: Christian Laugier and Pierre Bessière**) and
Probayes SME (**supervisor: Emmanuel Mazer**)
Grenoble
France

01/2006–01/2010 **Researcher** ISR-Coimbra, Portugal
BACS (Bayesian Approach to Cognitive Systems) — Integrated Project conducted under the Thematic Priority: Information Society Technologies — Sub-topic: Cognitive Systems — of the 6th Framework Program of the European Commission

Institute of Systems and Robotics
Coimbra
Portugal

01/2006–01/2010 **Ph. D. Fellow** Foundation for Science & Technology (FCT)
“Bayesian Cognitive Models for 3D Structure and Motion Multimodal Perception”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

IBILI – Institute for Biomedical Imaging and Life Sciences
Faculty of Medicine

University of Coimbra
Coimbra
Portugal

01/2005–12/2005 **Research Fellow** Foundation for Science & Technology (FCT)
Project POSI/SRI/45151/2002
“Multi-modality Medical Image Registration for Eye Diagnosis”

Centre of New Technologies for Medicine (CNTM),
Association for Innovation and Biomedical Research on Light (AIBILI),
Universidade de Coimbra

Institute of Systems and Robotics
Coimbra
Portugal

11/2004–12/2004 **Research Services Provider** Instituto de Investigação Interdisciplinar
“Structuring Project in Biomedicine”
(“Projecto Estruturante em Biomedicina”)

Casa Costa Alemão
Pólo II - University of Coimbra

303-194 Coimbra
Portugal

08/2001–07/2002 **Research Fellow (B.I.C.)** Foundation for Science & Technology (FCT)/CERN
PO-ROBOT

Institute of Systems and Robotics
Coimbra
Portugal

11/2000–04/2001 **Research Fellow (R & D Technician)** Instituto Pedro Nunes (IPN)
Physics Department, F. C. T. U. C.
Faculty of Science and Technology

ISA – Intelligent Sensing Anywhere
Instituto Pedro Nunes
Rua Pedro Nunes -- Edifício D
3030-199 Coimbra,
Portugal

09/1997–07/1999 **Research Fellow** ISR-Coimbra, Portugal
“Applications Development Using DCX-AT200 and PCL720 Boards”
(“Desenvolvimento de Aplicações Usando as Placas DCX-AT200 e PCL720”)

Institute of Systems and Robotics
Coimbra
Portugal

technology transfer

He is heavily engaged in technology transfer, namely in the fields of image processing, digital electronics systems design, instrumentation and control.

2015–Now **Senior Technical Consultant** Wexcedo, SME
Consulting and mentorship in digital electronics systems design for *Alfred*
technology
<http://hialfred.com/>

Instituto Pedro Nunes
Rua Pedro Nunes
3030-199 Coimbra
Portugal

2005 **RetMarkerC technology** AIBILI
Project POSI/SRI/45151/2002
“Multi-modality Medical Image Registration for Eye Diagnosis”

Preliminary work on *RetMarker* technology
<http://www.retmarker.com/retmarkerc-literature>

Centre of New Technologies for Medicine (CNTM),
Association for Innovation and Biomedical Research on Light (AIBILI),
Universidade de Coimbra

Institute of Systems and Robotics
Coimbra
Portugal

current advising

2016/2017 **Daniel Chichorro de Carvalho** University of Coimbra, Portugal
M. Sc. Degree
“Development of a Real-Time Facial Feature Detection and Tracking Framework for Robust Gaze Estimation”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

2016/2017 **Jorge Miguel de Carvalho Monteiro** University of Coimbra, Portugal
M. Sc. Degree
“Human-Inspired Object Discrimination by Colour for Artificial Attention”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

2016/2017 **Cláudio Eduardo Sousa Carvalho Araújo** University of Coimbra, Portugal
M. Sc. Degree
“Design and Development of a ROS Architecture for Robotic Multisensory Attention”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

2016/2017 **Fábio Elias Gonçalves Carreira** University of Coimbra, Portugal
M. Sc. Degree (as co-advisor)
“Stereo-Inertial 3D Perception Embedded System for UAVs”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

past advising

2015/2016 **André Alexandre Gaspar da Silva** University of Coimbra, Portugal
M. Sc. Degree
“Development of a Communication Hardware Infrastructure for Remote Control of Smart Houses Using KNX”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Wexcedo SME
Instituto Pedro Nunes
Rua Pedro Nunes
3030-199 Coimbra
Portugal

*Currently Hardware Manager at **Wexcedo SME***

2015/2016 **André de Jesus Gradil** University of Coimbra, Portugal
M. Sc. Degree
“Development of a Remote 3D Visualisation, Control and Simulation Framework for a Robotic Head”

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

*Currently a research grant holder at **IPN-LAS (Laboratory for Automation and Systems)***

04/2014–07/2015 **Beatriz Manata de Oliveira** Fundação para a Ciência e a Tecnologia (FCT)
BTI (Undergraduate) fellow for CASIR Project
(FCT Ref. PTDC/EEI-AUT/3010/2012)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

Currently the Activities Officer for the University of Coimbra IEEE student branch and finishing her MSc degree in Electrical Engineering and Computers, University of Coimbra

11/2013–07/ 2015 **Pablo Lanillos Pradas** Fundação para a Ciência e a Tecnologia (FCT)
Post-Doctoral fellow for CASIR Project
(FCT Ref. PTDC/EEI-AUT/3010/2012)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

Currently a postdoctoral researcher at the Institute of Cognitive Systems (ICS) of the Technische Universität München, under the supervision of Prof. Gordon Cheng

07/2013–02/2014 **João Nuno Antunes Oliveira** Fundação para a Ciência e a Tecnologia
BTI (Undergraduate) fellow for CASIR Project
(FCT Ref. PTDC/EEI-AUT/3010/2012)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

Currently finishing his MSc degree in Computer Science at the University of Coimbra

2010/2011 **Henrique Gonçalves Guerra** University of Coimbra, Portugal

M. Sc. Degree (as co-advisor)

"Implementation of a real-time probabilistic auditory source separation using a binaural setup"

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

*Currently an IT Manager at **Benecar, Automóveis SA***

2010/2011 **Pedro Miguel Caetano França Costa** University of Coimbra, Portugal

M. Sc. Degree (as co-advisor)

"Implementation Of Real-time Visual Saliency Algorithms On GPU"

Department of Electrical Engineering and Computers
Faculty of Science and Technology

Institute of Systems and Robotics
Coimbra
Portugal

*Currently a Hardware Designer at **PT Inovação***

participation in academic degree examining committees

2016 **Tiago Filipe Rodrigues Catarino** University of Coimbra, Portugal

"Development of Hand-Tracker: Wireless Solution Based on Inertial Sensors"

MSc in Electrical Engineering and Computer Science (as main opponent)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

2016 **João Miguel Coelho de Figueiredo** University of Coimbra, Portugal

"Portable Sensor for Explosives Detection"

MSc in Electrical Engineering and Computer Science (as main opponent)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

2016 **João Miguel Coelho de Figueiredo** University of Coimbra, Portugal

"Portable Sensor for Explosives Detection"

MSc in Electrical Engineering and Computer Science (as main opponent)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

- 2016 **Joan Olesa Vallespi** University of Coimbra, Portugal
"Implementation of a HMI system for a Waste Water Treatment Plant"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology
- 2016 **David Marques da Silva** University of Coimbra, Portugal
"Grid-based Representations in Mobile Robotics using Multisensory Data"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology
- 2015 **Hugo Filipe Costa Fernandes** University of Coimbra, Portugal
"Probabilistic Computing on FPGA with NIOS II Soft-Processor"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology
- 2015 **Marcelo Sousa** University of Coimbra, Portugal
"Desenvolvimento de um Simulador de Robô Móvel – Validação da Adaptação do OpenAR a OpenGL 3.3"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology
- 2015 **Renato Filipe Pais Vale** University of Coimbra, Portugal
"Avaliação e Controlo da Dor em Doentes em Cuidados Paliativos"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology
- 2014 **Seyed Hamidreza Mohades Kasaei** University of Coimbra, Portugal
"Open-ended 3D visual object category learning and recognition"
 MAPI Doctoral Programme in Computer Science (University of Aveiro)
 PhD Thesis Proposal Qualification Exam (as external opponent)
 Department of Electronics, Telecommunications and Informatics
 Campus Universitário de Santiago,
 3810-193 Aveiro
- 2014 **Pedro Miguel Neves Marques** University of Coimbra, Portugal
"Reconhecimento Facial usando representações esparsas discriminativas"
 MSc in Electrical Engineering and Computer Science (as main opponent)
 Department of Electrical Engineering and Computers
 Faculty of Science and Technology

2014 **Gonçalo dos Santos Martins** University of Coimbra, Portugal
“MRgraphslam – SLAM Cooperativo Baseado na Técnica GraphSLAM e em Partilha Eficiente de Informação Através de Redes Sem Fios Ad Hoc”
MSc in Electrical Engineering and Computer Science (as main opponent)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

2014 **Miguel Garcia Galvao de Almeida** University of Coimbra, Portugal
“Exploring Different Implementations of Probabilistic Computations on FPGAs”

MSc in Electrical Engineering and Computer Science (as main opponent)

Department of Electrical Engineering and Computers
Faculty of Science and Technology

professional service

editing

2017 **Guest Editor** International Journal of Approximate Reasoning (Elsevier)
Special Issue on Unconventional computing for Bayesian inference

Impact factor (2014): 2.451

Indexed in *Web of Science* and *Scopus*

<http://www.journals.elsevier.com/international-journal-of-approximate-reasoning>

2013–Now **Editor** Journal of Behavioral Robotics (Paladyn)
Editor for the area of “Assistive Robotics”

<http://www.degruyter.com/view/j/pjbr>

reviewing

2015–Now **Reviewer** IEEE Transactions on Autonomous Mental Development
Impact factor (2014): 1.478
Indexed in *Web of Science* and *Scopus*

<http://ieeexplore.ieee.org/xpl/aboutJournal.jsp?punumber=4563672>

2015–Now **Reviewer** MDPI Sensors
Impact factor (2014): 2.245
Indexed in *Web of Science* and *Scopus*

<http://www.mdpi.com/journal/sensors>

2015–Now **Reviewer** IEEE-RAS International Conference on Humanoid Robots

2015–Now **Reviewer** Iberian Robotics Conference

2015–Now **Reviewer** IEEE Transactions on Cybernetics
Impact factor (2014): 3.469
Indexed in *Web of Science* and *Scopus*

<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6221036>

- 2014–Now **Reviewer** MDPI Entropy
Impact factor (2014): 1.502
Indexed in *Web of Science* and *Scopus*
<http://www.mdpi.com/journal/entropy>
- 2014–Now **Reviewer** Elsevier Robotics and Autonomous Systems Journal
Impact factor (2014): 1.256
Indexed in *Web of Science* and *Scopus*
<http://www.journals.elsevier.com/robotics-and-autonomous-systems/>
- 2014–Now **Reviewer** Elsevier Physics Letters A
Impact factor (2014): 1.683
Indexed in *Web of Science* and *Scopus*
<http://www.journals.elsevier.com/physics-letters-a/>
- 2014–Now **Reviewer** Springer Journal of Robotics & Intelligent Systems
Impact factor (2014): 1.178
Indexed in *Web of Science* and *Scopus*
<http://www.springer.com/engineering/robotics/journal/10846>
- 2014–Now **Reviewer** Springer 3D Research
Indexed in *Scopus*
<http://www.springer.com/engineering/signals/journal/13319>
- 2012–Now **Reviewer** Elsevier Pattern Recognition Letters
Impact factor (2014): 1.551
Indexed in *Web of Science* and *Scopus*
<http://www.journals.elsevier.com/pattern-recognition-letters/>
- 2014–Now **Reviewer** ACM/IEEE International Conference on Human-Robot Interaction
- 2013 **Reviewer** International Conference on Computer Vision Theory and Applications
- 2013 **Reviewer** European Conference on Mobile Robots
- 2012–2014 **Reviewer** IEEE International Conference on Robotics and Automation
- 2011–Now **Reviewer** IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
- 2011 **Reviewer** International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS)

- 2010–Now **Reviewer** IEEE Robotics and Automation Magazine
Impact factor (2014): 2.413
 Indexed in *Web of Science* and *Scopus*
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=100>
- 2010–Now **Reviewer** IEEE Transactions On Intelligent Transportation Systems and Magazine
Impact factor (2014): 2.377
 Indexed in *Web of Science* and *Scopus*
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6979>
- 2010–Now **Reviewer** Actapress International Journal of Robotics and Automation
Impact factor (2014): 0.408
 Indexed in *Web of Science* and *Scopus*
https://www.actapress.com/Content_of_Journal.aspx?journalid=165
- 2010–Now **Reviewer** Actapress Control and Intelligent Systems
 Indexed in *Scopus*
https://www.actapress.com/Content_of_Journal.aspx?journalid=180

conference/workshop organisation and committees

- 2017 **Organising Committee Member** ICARSC 2017
IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC 2017)
 Local Arrangements
 Coimbra,
 Portugal
- 2017 **Organising Committee Member** FPL 2017
Portuguese Robotics Festival (Festival Português de Robótica – FPL 2017)
 Competitions & Workshops
 Coimbra,
 Portugal
- 2017 **Scientific Committee Member** REACTS 2017
4th Workshop on Recognition and Action for Scene Understanding (REACTS 2017)
 Ystad,
 Sweden
- 09/2015 **Organiser** UCBI 2015 Workshop
Workshop on Unconventional computing for Bayesian inference (UCBI 2015)
 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2015)
 Hamburg, Germany
- 09/2015 **Scientific Committee Member** REACTS 2015
3rd Workshop on Recognition and Action for Scene Understanding (REACTS 2015)

Mediterranean Conference Centre,
Valletta,
Malta

- 09/2013 **Scientific Committee Member** ECMR'13
6th European Conference on Mobile Robots (ECMR'13)

Barcelona,
Spain
- 08/2013 **Scientific Committee Member and Session Chair** REACTS 2013
*2nd Workshop on Recognition and Action for Scene Understanding (RE-
ACTS 2013)*

York,
United Kingdom
- 09/2011 **Scientific Committee Member** REACTS 2011
*2nd Workshop on Recognition and Action for Scene Understanding (RE-
ACTS 2013)*

Malaga,
Spain
- 11/2009 **Session Chair** IASTED 2009 Conference
"Artificial Intelligence, Autonomous and Mobile Robots"
IASTED International Conference on Robotics and Applications

Cambridge,
USA

invited talks

- 07/2016 **Keynote Speech** University of Coimbra, Portugal
*"At the Forefront of Robotics - History, Trends, Examples and Opportuni-
ties in Portugal for Innovators in STEM"*
João Filipe Ferreira

RobotCraft 2016

Department of Electrical Engineering and Computers
Faculty of Science and Technology
University of Coimbra,
Portugal
- 02/2016 **Seminar** Khalifa University (KUSTAR), UAE
*"The Need for Skills: Middleware for Long-Term, Open-Ended Human-
Robot Interaction"*
João Filipe Ferreira

Visual Signal Analysis and Processing Center (VSAP)
Khalifa University of Science, Technology & Research
Abu Dhabi,
United Arab Emirates
- 02/2016 **Module on Robotic Perception** Khalifa University (KUSTAR), UAE
*"Attentional Mechanisms for HRI – A Step Towards Building Intelligent
Middleware for Socially Interactive Robots"*
João Filipe Ferreira

Khalifa University of Science, Technology & Research
Abu Dhabi,
United Arab Emirates

- 09/2015 **Keynote Speech** UCBI 2015
“Probabilistic Approaches for Robotic Perception”
João Filipe Ferreira and Jorge Dias

Workshop on Unconventional computing for Bayesian inference
(UCBI 2015)
IEEE/RSJ International Conference on Intelligent Robots and Systems
(IROS 2015)
Hamburg,
Germany
- 09/2015 **Invited Highlight** ISACS 2015
“Designing an Artificial Attention System for Social Robots”
(research highlight from IROS 2015)
Pablo Lanillos and João Filipe Ferreira

8th International Symposium on Attention in Cognitive Systems
(ISACS 2015)
IEEE/RSJ International Conference on Intelligent Robots and Systems
(IROS 2015)
Hamburg,
Germany
- 08/2014 **Keynote Speech** Workshop on cognitive robotics
*Attentional Mechanisms for HRI – A Step to Building Intelligent Middleware
for Socially Interactive Robots*
João Filipe Ferreira

Workshop on Developmental and bio-inspired approaches for memory
and emotion modelling in cognitive robotics
IEEE RO-MAN 2014 Conference, Heriot-Watt University,
Edinburgh,
UK
- 07/2013 **Seminar** University of Coimbra, Portugal
*“CASIR – Coordinated Control of Stimulus-Driven and Goal-Directed Mul-
tisensory Attention Within the Context of Social Interaction with Robots”*
João Filipe Ferreira

Institute for Biomedical Imaging and Life Sciences (IBILI)
University of Coimbra,
Portugal
- 11/2012 **Keynote Speech** University of Coimbra, Portugal
“Multidisciplinaridade e Interdisciplinaridade na Universidade de Coimbra”
(in Portuguese)
João Filipe Ferreira

“FCTUC - Incubadora do Saber” Physics Department,
Faculty of Sciences and Technology,
University of Coimbra

03/2008 **Keynote Speech**

University of Sheffield

“Active Exploration Using Bayesian Models for Multimodal Perception”

João Filipe Ferreira, Miguel Castelo-Branco and Jorge Dias

Computational and cognitive models for audio-visual interactions workshop

University of Sheffield,
English Peak District,
England

professional memberships

2015–Now **Member**

IEEE-RAS, T-CORO

IEEE Robotics and Automation Society (RAS)

Technical Committee on Cognitive Robotics

2014–Now **Officer in the Portuguese Chapter**

IEEE-RAS

Treasurer from 2014 to 2015, Secretary since 2016

2012–Now **Member**

IEEE

IEEE (Institute of Electrical and Electronics Engineers)

- IEEE Robotics and Automation Society (RAS) – Member since 2012
- IEEE Life Sciences Community – Member since 2013
- IEEE Systems, Man and Cybernetics Society – Member since 2014
- IEEE Computational Intelligence Society – Member since 2015

publications

Since 1997, João Filipe Ferreira has published **7 peer-reviewed journal articles (6 of which as first author), 3 book chapters**, and **over 30 peer-reviewed conference/workshop papers**. He is the main author of a textbook from the Springer STAR (Springer Tracts in Advanced Robotics) Series.

João Filipe Ferreira has:

- an **h-index of 4**, as calculated by the *Web of Science* (WoS);
- an **h-index of 4**, as calculated by *Scopus*;
- an **h-index of 10**, as calculated by *Google Scholar*.

articles in peer-reviewed journals

- [1] Integration of touch attention mechanisms to improve the robotic haptic exploration of surfaces

Ricardo Martins, João Filipe Ferreira, Miguel Castelo-Branco, and Jorge Dias

Neurocomputing 222 (2017) pp. 204–216. 2017.

- [2] Attentional Mechanisms for Socially Interactive Robots – A Survey

João Filipe Ferreira and Jorge Dias

IEEE Transactions on Autonomous Mental Development 6.2 (June 2014) pp. 110–123. 2014.

- [3] A Bayesian Framework for Active Artificial Perception

João Filipe Ferreira, Jorge Lobo, Pierre Bessière, Miguel Castelo-Branco, and Jorge Dias

IEEE Transactions on Cybernetics (Systems Man and Cybernetics, part B) 43.2 (Apr. 2013) pp. 699–711. 2013.

- [4] A hierarchical Bayesian framework for multimodal active perception
João Filipe Ferreira, Miguel Castelo-Branco, and Jorge Dias
Adaptive Behavior 20.3 (June 2012) pp. 172–190. 2012.
- [5] Learning emergent behaviours for a hierarchical Bayesian framework for active robotic perception
João Filipe Ferreira, Christiana Tsiourti, and Jorge Dias
Cognitive Processing 13.1 (July 2012) pp. 155–159. 2012.
- [6] Bayesian real-time perception algorithms on GPU — Real-time implementation of Bayesian models for multimodal perception using CUDA
João Filipe Ferreira, Jorge Lobo, and Jorge Dias
Journal of Real-Time Image Processing 6.3 (Sept. 2011) pp. 171–186. 2011.
- [7] Imagiologia Tridimensional Digital para Construção de Protótipos Industriais
João Ferreira, Nuno Martins, Luís Agnelo, and Jorge Dias
Robótica 4th Trimester 2001.45 (Nov. 2001) pp. 28–34. 2001.

books

- [8] Probabilistic Approaches for Robotic Perception
João Filipe Ferreira and Jorge Dias
Springer, Springer Tracts in Advanced Robotics (STAR), 2014.

peer-reviewed book chapters

- [9] Gaze Tracing in a Bounded Log-spherical Space for Artificial Attention Systems
Beatriz Oliveira, Pablo Lanillos, and João Filipe Ferreira
ROBOT'2015 - Second Iberian Robotics Conference, 2015.
- [10] Active Exploration Using Bayesian Models for Multimodal Perception
João Filipe Ferreira, Cátia Pinho, and Jorge Dias
Image Analysis and Recognition, Lecture Notes in Computer Science series (Springer LNCS), International Conference ICIAR 2008, 2008.
- [11] Three-Dimensional Planar Profile Registration in 3D Scanning
João Filipe Ferreira and Jorge Dias
Image Analysis and Recognition, Lecture Notes in Computer Science series (Springer LNCS), ICIAR — International Conference on Image Analysis and Recognition, 2005.

peer-reviewed conferences/workshop papers

- [12] Bayesian inference implemented on FPGA with stochastic bitstreams for an autonomous robot
Hugo Fernandes, M. Awais Aslam, Jorge Lobo, João Filipe Ferreira, and Jorge Dias
International Conference on Field Programmable Logic and Applications (FPL), 2016.
- [13] A Visualisation and Simulation Framework for Local and Remote HRI Experimentation
André Gradil and João Filipe Ferreira
23º Encontro Português de Computação Gráfica e Interação (EPCGI'16), 2016.
- [14] Brief Survey on Computational Solutions for Bayesian Inference
José Domingos Alves, João Filipe Ferreira, Jorge Lobo, and Jorge Dias
Workshop on Unconventional computing for Bayesian inference (UCBI), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2015, Hamburg, Germany.
- [15] Synthesis of Bayesian Machines on FPGAs using Stochastic Arithmetic
Rui Duarte, Jorge Lobo, João Filipe Ferreira, and Jorge Dias
2nd International Workshop on Neuromorphic and Brain-Based Computing Systems (NeuComp 2015), Design Automation Test Europe (DATE2015), 2015.
- [16] Fast Exact Bayesian Inference for High-Dimensional Models

- João Filipe Ferreira, Pablo Lanillos, and Jorge Dias
Workshop on Unconventional computing for Bayesian inference (UCBI), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2015, Hamburg, Germany.
- [17] **Designing an Artificial Attention System for Social Robots**
 Pablo Lanillos, João Filipe Ferreira, and Jorge Dias
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2015, Hamburg, Germany.
- [18] **Multisensory 3D Saliency for Artificial Attention Systems**
 Pablo Lanillos, João Filipe Ferreira, and Jorge Dias
3rd Workshop on Recognition and Action for Scene Understanding (REACTS), 2015, Malta.
- [19] **Evaluating the Influence of Automatic Attentional Mechanisms in Human-Robot Interaction**
 Pablo Lanillos, João Filipe Ferreira, and Jorge Dias
9th ACM/IEEE International Conference on Human-Robot Interaction (HRI 2014), Workshop 4 – HRI: a bridge between Robotics and Neuroscience, 2014, Bielefeld, Germany.
- [20] **Touch attention Bayesian models for robotic active haptic exploration of heterogeneous surfaces**
 Ricardo Martins, João Filipe Ferreira, and Jorge Dias
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2014), 2014, Chicago, USA.
- [21] **Hierarchical Log-Spherical Inference Grid – An Unconventional Approach to Robotic Perception and Action**
 João Filipe Ferreira and Jorge Dias
UARACIN – Workshop on Unconventional Approaches to Robotics, Automation and Control Inspired by Nature, 2013 IEEE International Conference on Robotics and Automation (ICRA 2013), 2013.
- [22] **Touch attention Bayesian models for robotic active haptic exploration**
 Ricardo Martins, João Filipe Ferreira, and Jorge Dias
2nd Workshop on Recognition and Action for Scene Understanding (REACTS 2013), 2013, York, UK.
- [23] **Bayesian 3D Independent Motion Segmentation with IMU-Aided RGB-D Sensor**
 Jorge Lobo, João Filipe Ferreira, Pedro Trindade, and Jorge Dias
Proceedings of the 2012 IEEE International Conference on Multisensor Fusion and Information Integration (MFI 2012), 2012, Hamburg.
- [24] **Real Time Facial Features Tracking using an Active Vision System**
 G. Macesanu, S. Grigorescu, João Filipe Ferreira, Jorge Dias, and F. Moldoveanu
Proceedings of 13th International Conference on Optimization of Electrical and Electronic Equipment (OPTIM 2012), 2012, Brasov, Romania.
- [25] **A Bayesian Hierarchy for Gaze Following**
 Gigel Macesanu, João Filipe Ferreira, and Jorge Dias
5th International Conference on Cognitive Systems, COGSYS 2012, 2012, TU Vienna, Austria.
- [26] **Touch attention Bayesian models for object feature extraction in robotic blind manipulation**
 Ricardo Martins, João Filipe Ferreira, and Jorge Dias
32nd International Workshop on Bayesian Inference and Maximum Entropy Methods in Science and Engineering (MaxEnt 2012), 2012, Munich.
- [27] **A Novel Framework for Data Registration and Data Fusion in Presence of Multi-modal Sensors**
 Hadi Aliakbarpour, João Filipe Ferreira, Kamrad Koshhal, and Jorge Dias
Emerging Trends in Technological Innovation, 2010.
- [28] **A Bayesian Hierarchical Framework for Multimodal Active Perception**
 João Filipe Ferreira and Jorge Dias
“Smarter sensors, easier processing” - Workshop, 11th International Conference on Simulation of Adaptive Behavior (SAB 2010), 2010.
- [29] **Implementation and Calibration of a Bayesian Binaural System for 3D Localisation**

- João Filipe Ferreira, Cátia Pinho, and Jorge Dias
2008 IEEE International Conference on Robotics and Biomimetics (ROBIO 2008), 2009, Bangkok, Thailand.
- [30] **Multimodal Active Exploration Using A Bayesian Approach**
 João Filipe Ferreira, José Prado, Jorge Lobo, and Jorge Dias
IASTED International Conference in Robotics and Applications, 2009, Cambridge MA, USA.
- [31] **Robotic Implementation of Biological Bayesian Models Towards Visuo-inertial Image Stabilization and Gaze Control**
 Jorge Lobo, João Filipe Ferreira, and Jorge Dias
2008 IEEE International Conference on Robotics and Biomimetics (ROBIO 2008), 2009, Bangkok, Thailand.
- [32] **Bayesian Models for Multimodal Perception of 3D Structure and Motion**
 João Filipe Ferreira, Pierre Bessière, Kamel Mekhnacha, Jorge Lobo, Jorge Dias, and Christian Laugier
International Conference on Cognitive Systems (CogSys 2008), 2008, University of Karlsruhe, Karlsruhe, Germany.
- [33] **Bayesian Sensor Model for Egocentric Stereovision**
 João Filipe Ferreira, Cátia Pinho, and Jorge Dias
14ª Conferência Portuguesa de Reconhecimento de Padrões Coimbra (RECPAD 2008), 2008.
- [34] **Robotic Implementation of Biological Bayesian Models Towards Visuo-inertial Image Stabilization and Gaze Control**
 Jorge Lobo, João Filipe Ferreira, José Prado, and Jorge Dias
IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2008), 2008, Nice.
- [35] **A Bayesian Binaural System for 3D Sound-Source Localisation**
 Cátia Pinho, João Filipe Ferreira, Pierre Bessière, and Jorge Dias
International Conference on Cognitive Systems (CogSys 2008), 2008, University of Karlsruhe, Karlsruhe, Germany.
- [36] **Bioinspired Visuovestibular Artificial Perception System for Independent Motion Segmentation**
 Jorge Lobo, João Filipe Ferreira, and Jorge Dias
2nd International Cognitive Vision Workshop, 2006.
- [37] **Multimodal Macula Mapping: Study for Rigid, Perspective and Non-Rigid Image Registration**
 Pedro Baptista, Rui Bernardes, João Ferreira, Jorge Dias, and José Cunha-Vaz
EMBE 2005, IFMBE Proceedings, 2005, Prague, Czech Republic.
- [38] **Distortion Free Registration Between Multifocal ERG and Retinal Leakage Analyze**
 Rui Bernardes, João Ferreira, Pedro Baptista, Ana Sebastião, Jorge Dias, and José Cunha-Vaz
EMBE 2005, IFMBE Proceedings, 2005, Prague, Czech Republic.
- [39] **Earmarking Retinal Changes In A Sequence Of Digital Color Fundus Photographs**
 João Filipe Ferreira, Rui Bernardes, Pedro Baptista, and José Cunha-Vaz
EMBE 2005, IFMBE Proceedings, 2005, Prague, Czech Republic.
- [40] **Earmarking Retinal Changes In A Sequence Of Digital Color Fundus Photographs**
 João Filipe Ferreira, Rui Bernardes, Pedro Baptista, and José Cunha-Vaz
EASDEC – 15th Meeting of the EASD Eye Complications Study Group, 2005, Coimbra, Portugal.
- [41] **Implementing a Color-Coded Scheme for Earmarking Retinal Changes In A Sequence Of Digital Color Fundus Photographs**
 João Filipe Ferreira, Rui Bernardes, Pedro Baptista, and José Cunha-Vaz
EVER 2005 – European Association for Vision and Eye Research Meeting, 2005, Vilamoura, Portugal.
- [42] **Tele-3D – Developing a Handheld Scanner Using Structured Light Projection**
 João Ferreira, Jorge Lobo, and Jorge Dias
3DPVT Proceedings – 1st International Symposium on 3D Processing, Visualization and Transmission, 2002.
- [43] **Tele-3D – Developing a Handheld Scanner Using Structured Light Projection**
 João Ferreira, Jorge Lobo, and Jorge Dias

- [44] A 3D Scanner — Three-Dimensional Reconstruction From Multiple Images
João Ferreira and Jorge Dias
Proc. Controlo 2000 Conf. on Automatic Control, 2000.

theses

- [45] Bayesian Cognitive Models for 3D Structure and Motion Multimodal Perception
João Filipe Ferreira
Faculty of Sciences and Technology of the University of Coimbra (FCTUC), July, 2011.
- [46] TELE-3D — Um Scanner para Registo Tridimensional de Objectos
João Filipe Ferreira
Institute of Systems and Robotics, University of Coimbra, 2004.

research reports

- [47] The CASIR-IMPEP Attention Framework for Social Interaction with Robots
Pablo Lanillos, João Nuno Oliveira, and João Filipe Ferreira
Tech. rep. MRL-CASIR-2015-07-TR004, 2015.
- [48] ROS Infrastructure for IMPEP
Pablo Lanillos, João Nuno Oliveira, and João Filipe Ferreira
Tech. rep. MRL-CASIR-2013-12-TR001, 2013.
- [49] 3D Structure and Motion Multimodal Perception
João Filipe Ferreira and Miguel Castelo-Branco
State-of-the-Art Report, 2007.
- [50] State of the Art on 3D Audiovisual APIs/SDKs for Stimulus Generation and Presentation
João Filipe Ferreira, Xavier Perrin, Mario Kleiner, and Ricardo Chavarriaga
Tech. rep., 2007.
- [51] Procedimentos de Calibração Para o Scanner Tele-3D
João Filipe Ferreira
Tech. rep., 2002.
- [52] Scanners 3D — State-Of-The-Art
João Filipe Ferreira
Tech. rep., 2002.
- [53] «Pacote» de Software Para Desenvolvimento de Aplicações Usando as Placas DCX-AT200 e PCL720
João Filipe Ferreira
Tech. rep., 1997.

other personal interests and details

Pro-Bono Activity – Elected member of the Fiscal Board of AIAPAF (Associação de Inovação no Apoio a Pessoas com Autonomia Fragilizada – Association for Innovation in the Support of People with Decreased Autonomy) since 2014.

Volunteering – Has volunteered for several humanitarian campaigns in Portugal throughout the years, such as “Banco Alimentar” (Portuguese Food Bank).

Other Interests – Part-time composer, guitarist and vocalist.