UNIVERSITÀ DEGLI STUDI DI MILANO
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Sara Bernardini
CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	BERNARDINI
NOME	SARA
DATA DI NASCITA	17/01/1977

CURRICULUM

RESEARCH INTERESTS

- **AI Planning and Autonomous Decision-Making**
  Temporal and metric planning, planning under uncertainty, probabilistic reasoning, domain specification languages, automatic domain analysis, domain modelling, search control

- **Autonomous and Intelligent Systems**
  Persistent autonomy, integration of planning and acting in robotics, plan execution, monitoring, agent architectures, multi-agency, human-computer interaction

- **Real-world Applications of Planning and Autonomous Systems**
  Cognitive robotics, autonomous vehicles (aerial, ground and underwater), surveillance operations, extreme environments (disaster response, off-shore and nuclear energy, mining, space, oil & gas), adaptive technology, Internet of Things

EDUCATION

- **PhD in Computer Science** (May 2008)
  International Graduate School in Information and Communication Technologies
  University of Trento, Italy
  Specialisation: Automated Reasoning
  Thesis: *Constraint-based Temporal Planning: Domain Modelling and Search Control*

- **MSc and BSc in Computer Science and Engineering** (December 2002)
  Faculty of Engineering, University of Rome "La Sapienza", Italy
  Thesis: *Structure and Satisfiability in Propositional Formulae*
  Summa cum Laude
  Honourable mention in the 2002 AI*IA Master Dissertation Award conferred by the Artificial Intelligence Italian Association (AI*IA)

EMPLOYMENT

- Associate Professor (Senior Lecturer) in Artificial Intelligence (November 2017 – present)
  Director of MSc in Artificial Intelligence
  Royal Holloway University of London, Department of Computer Science
  Egham, Surrey, UK

- Visiting Faculty (July 2018 – December 2018)
  Massachusetts Institute of Technology (MIT),
  Computer Science and Artificial Intelligence Laboratory (CSAIL)
  Cambridge, Massachusetts, USA

- Lecturer in Computer Science (September 2015 – October 2017)
  Royal Holloway University of London, Department of Computer Science
  Egham, Surrey, UK

- Visiting Senior Researcher (September 2015 – September 2018)
  King's College London, Department of Informatics
  London, UK

- Research Associate (September 2012 – August 2015)
  King's College London, Department of Informatics
  London, UK

- Research Fellow (November 2008 – August 2012)
  University College London (UCL), Knowledge Lab
  London, UK

- Research Scientist (October 2005 – January 2007)
  NASA Ames Research Center, Intelligent Systems Division
  Moffett Field, CA, USA

- PhD Student (November 2004 – May 2008)
  Fondazione Bruno Kessler - Irst: Centre for Scientific and Technological Research,
  Automated Reasoning Division, Trento, Italy

- Research Assistant (July 2002 – January 2005)
  Fondazione Bruno Kessler - Irst: Centre for Scientific and Technological Research,
  Automated Reasoning Division, Trento, Italy

ONGOING RESEARCH GRANTS: PRINCIPAL INVESTIGATOR

- *Connect-R - Providing Structure in Unstructured Hazardous Environments*
  (February 2019 – February 2021)
    - *Research project funded by Innovate UK (#26039) and industrial partners*
    - *Industrial partners: Barrnon, Jigsaw Structures, Ross Robotics, Tharsus*
    - *Other partners: UK Atomic Energy Authority, University of Edinburgh*
    - *RHUL: £477,000; Total project: £6,000,000*
    - *This is the second biggest project ever funded by Innovate UK*
    - *2 Postdoctoral Research Associates*

- *Multi-Platform Inspection, Maintenance & Repair in Extreme Environments (MIMRee)*
  (March 2019 – March 2021)
    - *Research project funded by Innovate UK (#26243) and industrial partners*
    - *Industrial partners: Thales UK, Plan Integrity, BladeBug, Wootzano*
    - *Other partners: Offshore Renewable Energy Catapult, Royal College of Art, University
      of Manchester, University of Bristol*
    - *RHUL: £250,000; Total project: £4,2000,000*
    - *1 Postdoctoral Research Associate*

- *Prometheus - A Reconfigurable Robotic Platform with Advanced Sensing for Confined Spaces*
  (March 2019 – March 2021)
    - *Research project funded by Innovate UK (#26078) and industrial partners*
    - *Industrial partners: Thales UK, Headlight AI, Callen-Lenz*
    - *Other partners: Network Rail, University of Manchester, University of Bristol*
    - *RHUL: £220,000; Total project: £2,2000,000*
    - *1 Postdoctoral Research Associate*

- *Shared Autonomy via Robust Task Planning and Argumentation (SHARPA)*
  (October 2018 – September 2019)
    - *Research project funded by EPSRC (EP/S016473/1)*
    - *Collaborators: MIT*
    - *RHUL: £20,000*

- ***Autonomous Search-and-Tracking via Multiple Coordinated Drones***
  (April 2018 – June 2019)
    - *Research project funded by the UK Industrial Strategy Uplift Fund*
    - *Collaborators: University of Toronto*
    - *RHUL: **£20,000***
    - *1 Postdoctoral Research Associate (co-funded by University of Toronto)*

- **Leverhulme Magna Carta Doctoral Training Scholarship:** *Effective use of drones in emergency response – A socio-technical perspective*
  (January 2018 - January 2021)
    - *- Funded by The Leverhulme Trust*
    - *- 3-year PhD scholarship*
    - *- In collaboration with Dr Amany Elbanna, School of Management*

PREVIOUS RESEARCH GRANTS: PRINCIPAL INVESTIGATOR

- ***Robust Task Planning and Argumentation***
  (July 2018 – December 2018)
    - *Research project funded by RHUL – Research Strategy Fund*
    - *Collaborators: MIT and NASA Ames Research Center*
    - *RHUL**: £5,000***

- ***Automated Plan-Based Policy-Learning for Surveillance Problems***
  (September 2015 – February 2016)
    - *Research project funded by EPSRC (EP/J012157/1)*
    - *Industrial collaborators: BAE Systems*
    - *Academic Collaborators: King's College London, NASA Ames Research Center*
    - *RHUL: **£15,500***
    - *1 Postdoctoral Research Associate (co-funded by King's College London)*

RECENT RESEARCH CONTRACTS

- Named Researcher at King's College London: *Planning Distributed Search Operations*
  (November 2015 – April 2015)
    - *Research project funded by the Defence Science and Technology Laboratory (DSTL), ASUR programme (C5 PH1 087)*
    - *Industrial partner: SeeByte*

- Named Researcher at UCL: *TARDIS: Training young Adult's Regulation of emotions and Development of social Interaction Skills*
  (September 2011 - August 2012)
    - *Research project funded by the European Union – FP7 ICT 2011-7*

- Researcher: *ECHOES: Intelligent virtual environment for improving children's social skills*
  (November 2008 – August 2011)
    - *Research project jointly funded by EPSRC and ESRC - RES-139-25-0395*
    - *In collaboration with five special needs schools in the UK*

ORGANISATION OF CONFERENCES

- **Chair of the Novel Application Track**: 30th International Conference on Automated Planning and Scheduling (ICAPS-20)
  (ICAPS is the top international conference in AI planning and one of the best conferences in AI. Typically, it has an acceptance rate between 25% and 30%.)

- **General Chair:** 3rd Summer School on Cognitive Robotics (July 2019)
  (The school has received more than 100 applications. I wrote two grant proposals to support the organisation of the school, one submitted to the AI Journal and the other submitted to the National Science Foundation. I coordinate an organisation team that includes MIT, the Jet Propulsion Laboratory (JPL) and the University of Southern California.)
- **Workshop Chair:** 29th International Conference on Automated Planning and Scheduling (ICAPS-19)
- **Publicity Chair:** 28th International Conference on Automated Planning and Scheduling (ICAPS-18)
- **Journal Track Chair:** 27th International Conference on Automated Planning and Scheduling (ICAPS-17)
- **Chair:** 1st, 2nd and 3rd Workshop on Integrated Planning, Acting, and Execution (IntEx) at ICAPS-17, ICAPS-18 and ICAPS-19
- **Chair:** 10th, 11th, 12th and 13th International Scheduling and Planning Applications woRKshop (SPARK) at ICAPS-16, ICAPS-17, ICAPS-18 and ICAPS-19
- **Senior Local Arrangements Chair:** 26th International Conference on Automated Planning and Scheduling (ICAPS-16)
- **Remote Participation Chair:** 24th International Conference on Automated Planning and Scheduling (ICAPS-14)

INVITED SPEAKER

- **IBM Workshop on AI Planning** (November 2018)
  IBM Research, Cambridge, MA, USA
  Large-Scale Autonomous Search-and-Tracking via AI Planning and Probabilistic Reasoning
  120 attendees
- **Developing Skills for the Digital Era** (September 2017)
  United Nations, ITU Budapest, Hungary
  Developing Skills for the Digital Era: The Role of Academic Institutions
  150 attendees
- **Crash Course in Autonomy: Programming Cognitive Robots** (January 2015)
  Massachusetts Institute of Technology (MIT), Boston, USA
  Autonomous Search and Tracking via Temporal Planning
  50 attendees
- **15th European Agent Systems Summer School** (July 2013)
  Department of Informatics, King's College London, UK
  Autonomous Intelligent Agents in Action: Agents on Earth and in Space
  60 attendees

SELECTED INVITED PRESENTATIONS

- **University of Toronto,** Toronto, Canada (December 2018)
  Autonomous Target Search with Multiple Coordinated UAVs
- **MIT**, Cambridge, MA, USA (August 2018)
  Large-Scale Autonomous Search-and-Tracking via AI Planning and Probabilistic Reasoning
- **Callen-Lenz,** Salisbury, U.K. (January 2018)
  Probabilistic vs Deterministic Methods for Large-Scale Autonomous Search-and-Tracking
- **ASV Global,** Portchester**,** U.K. (January 2018)
  Autonomy via AI Planning and Probabilistic Reasoning
- **VTOL Technologies,** Wokingham, U.K. (December 2017)
  Autonomy via AI Planning and Probabilistic Reasoning
- **Schlumberger,** Cambridge, U.K. (October 2017)
  Probabilistic vs Deterministic Methods for Large-Scale Autonomous Search-and-Tracking

- **Southampton University,** Southampton, U.K. (September 2017)
  Autonomous Decision Making for Search and Tracking with Multiple Coordinated UAVs
- **LAAS – CNRS,** Toulouse, France (July 2017)
  Probabilistic vs Deterministic Methods for Large-Scale Autonomous Search-and-Tracking
- **Lockheed Martin,** Havant, Hampshire, UK (January 2017)
  Probabilistic vs Deterministic Methods for Large-Scale Autonomous Search-and-Tracking
- **NASA Ames Research Center,** Moffett Field, CA, USA (December 2015)
  Leveraging Probabilistic Reasoning in Deterministic Planning for Large-Scale Autonomous Search-and-Tracking
- **ICT4D**, Dept. of Geography, Royal Holloway University of London, U.K. (December 2015)
  Leveraging AI Temporal Planning in Disaster Response Missions
- **Rescue Global,** London, U.K. (April 2015)
  Autonomous Surveillance Missions via Temporal Planning
- **MIT,** Cambridge (MA), USA (January 2015)
  Autonomous Search and Tracking via Temporal Planning
- **King's College London,** London, U.K. (May 2012)
  Automatic Synthesis of Temporal Invariants
- **Microsoft Research,** Cambridge, U.K. (February 2012)
  Constraint-based Temporal Planning: Domain Modelling and Search Control
- **Palo Alto Research Center (Xerox PARC)**, Palo Alto, CA, USA (August 2011)
  Translating PDDL2.2 into a Constraint-based Variable/Value Language
- **NASA Ames Research Center,** Moffett Field, CA, USA (August 2011)
  Automatic Synthesis of Temporal Invariants
- **CNRS,** Signal and Image Processing Lab, Multimedia Group, Paris, France (May 2009)
  *Scaffolding children's social skills through embodied interactions in a 3D environme*nt
- **University of Edinburgh,** School of Informatics, Edinburgh, U.K. (May 2009)
  Constraint-based Temporal Planning: Domain Modelling and Search Control
- **LAAS – CNRS,** Toulouse, France (September 2008)
  Constraint-based Temporal Planning: Domain Modelling and Search Control

ACADEMIC PRIZES, AWARDS, HONOURS

- **Runner-up:** Fifth International Competition on Knowledge Engineering for Planning and Scheduling at the Twenty-Sixth International Conference on Automated Planning and Scheduling (ICAPS-16)
- **Most Participative Demo Award:** Twenty-First Conference on User Modelling, Adaptation and Personalization (UMAP-13) - System Demonstration Track
- **Honourable Mention:** 2002 AI*IA Master Dissertation Award conferred by the Artificial Intelligence Italian Association (AI*IA)
- **Doctoral Scholarship:** 3-year scholarship awarded by Fondazione Bruno Kessler (2003-2007)
- **BSc and MSc Scholarships:** merit-based scholarships awarded by the Italian Federation of "Cavalieri del Lavoro" (distinguished entrepreneurs decorated with the Order of Merit for Labour by the President of the Italian Republic) (1996-2001)

AWARD COMMITTEE MEMBERSHIPS

- **ICAPS Influential Paper Award** – Twenty-Fifth International Conference on Automated Planning and Scheduling (ICAPS-15)
- **ICAPS Best Dissertation Award** – Twenty-Fifth International Conference on Automated Planning and Scheduling (ICAPS-15)

PROGRAM COMMITTEE MEMBERSHIPS

- **International Conference on Automated Planning and Scheduling (ICAPS)**
  Main Track: 2019, 2018, 2017, 2016, 2015, 2014, 2013, 2010, 2009
  Novel Applications Track: 2019, 2018, 2017, 2016, 2015
  Robotics Track: 2017, 2016, 2015
- **International Joint Conference on Artificial Intelligence (IJCAI)**
  2019, 2018, 2017, 2016, 2015, 2013
- **AAAI Conference on Artificial Intelligence (AAAI)**
  2019 (Senior Program Committee member)
  2018, 2017, 2016
- **International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)**
  2019, 2018, 2017, 2016
- **Twenty First European Conference on Artificial Intelligence (ECAI-14)**
  Senior Program Committee
- **Fourteenth European Conference on Logics in Artificial Intelligence (JELIA-14)**
- **International Conference on User Modelling, Adaptation and Personalization (UMAP)**
  2016, 2015, 2014
- **International FLAIRS Conference**
  2018, 2017, 2016, 2015

REVIEWER ACTIVITY

- Artificial Intelligence Journal
- AI Magazine
- AI Communications
- Information Science
- Journal of Robotics and Autonomous Systems
- Journal of Experimental and Theoretical Artificial Intelligence
- Personal and Ubiquitous Computing
- IEEE Transactions on Affective Computing
- IEEE Transactions on Learning Technologies
- IEEE Transactions on Aerospace and Electronic Systems
- IEEE Transactions on Evolutionary Computation

CURRENT ACADEMIC COLLABORATIONS

- **Massachusetts Institute of Technology (MIT)**, Computer Science and Artificial Intelligence Laboratory (CSAIL), Model-Based Embedded and Robotics Systems Group
  Professor Brian Williams
- **King's College London**, Department of Informatics, Planning Group
  Professor Derek Long
- **Politecnico di Torino**, Department of Mathematical Sciences DISMA, Networks Group
  Professor and Head of Department: Fabio Fagnani
- **University of Toronto,** Department of Mechanical & Industrial Engineering
  Professor Chris Beck and Dr Chiara Piacentini
- **University of Edinburgh,** School of Engineering
  Dr Adam Stokes
- **University of Manchester,** School of Electrical and Electronic Engineering
  Dr Simon Watson
- **University of Bristol,** Faculty of Engineering
  Dr Tom Richardson

- **Royal College of Art,** School of Design
  Dr Sina Sareh

ACTIVITIES and COLLABORATIONS BEYOND THE HE SECTOR

- **NASA Ames Research Center** and **NASA's Johnson Space Center**
  (March 2018 - present)
  I collaborate with NASA regarding the use of AI planning to underpin autonomous manipulation tasks performed by a robotic arm on the International Space Station.

- **Barrnon, Jigsaw Structures, Ross Robotics, Tharsus, and UK Atomic Energy Authority**
  (September 2018 - present)
  I collaborate with these companies and institutions in the context of the project "Connect-R", which they have contributed to funding up to 50%. "Connect-R" will deliver robotic solutions for nuclear decommissioning.

- **Thales UK, Headlight AI, Callen-Lenz and Network Rail**
  (September 2018 - present)
  I collaborate with these companies and institutions in the context of the project "Prometheus", which they have contributed to funding up to 50%. "Prometheus" will deliver technology for the autonomous exploration of abandoned mines.

- **Thales UK, Plan Integrity, BladeBug, Offshore Renewable Energy Catapult, and Wootzano**
  (September 2018 - present)
  I collaborate with these companies and institutions in the context of the project "MIMRee", which they have contributed to funding up to 50%. "MIMRee" will deliver solutions for the offshore renewable energy sector.

- **NGOs Rescue Global and S.A.R.A.I.D**
  (March 2016 - present)
  I collaborate with these NGOs to explore the role and impact of autonomous drones for disaster response. I have participated in various training exercises with them.

- **NASA Ames Research Center**
  (January 2014 – December 2016)
  I collaborated with NASA regarding the use of AI planning to underpin the behaviour of autonomous drones in the context of the project "Vertical Lift Autonomy". This project is one of the impact case studies for the Department of Computer Science.

- **BAE Systems**
  (November 2013 – April 2016)
  I collaborated with this company on autonomous drones for search-and-tracking operations in the context of the EPSRC project "Automated Plan-Based Policy-Learning for Surveillance Problems".

- **SeeByte**
  (November 2015 – April 2015)
  I collaborated with this company on autonomous vehicles for underwater search operations in the context of the ASUR project "Planning Distributed Search Operations".

IMPACT

- Interview at **BBC World Service – Business Matters** about my project "MIMRee" (Multi-Platform Inspection, Maintenance & Repair in Extreme Environments)
  (June 1st, 2019)

- **Press coverage** of my project "MIMRee" (Multi-Platform Inspection, Maintenance & Repair in Extreme Environments):
  (May – June 2019)
  - *The Telegraph (web & print)*:
    https://www.telegraph.co.uk/technology/2019/05/28/4m-government-funding-granted-project-wind-farm-repairs-using/
  - *The Times (web and print)*:
    https://www.thetimes.co.uk/article/drones-from-robot-boats-will-repair-wind-farms-f035cnl89?shareToken=c71902349c27eb31f4079eaa708d03aa
  - *The Engineer*: https://www.theengineer.co.uk/robot-offshore-wind-farm-inspection/
  - *Business Telegraph:* https://www.businesstelegraph.co.uk/robot-team-set-sail-for-offshore-wind-farm-inspection/

- **USA Inform & Inspire Global Expert Mission** organized by the **Robotics and AI Industrial Strategy Challenge Fund**
  (March 2019)
  I have been selected by Innovate UK to represent the research that the UK carries out in AI and Robotics in a high-profile mission to the USA. Only ten individuals have been chosen among all the projects funded by Innovate UK. The goal of the mission was to pursue new markets and investment opportunities in the technology sector and create strategic partnerships abroad as well as to inform policymakers about the current landscape of robotics and AI in the world.

- **Consultancy** for **NASA Ames Research Center**
  (January 2014 – December 2016)
  Scientific consultancy regarding the use of AI planning to underpin the behaviour of autonomous drones in the context of the project "Vertical Lift Autonomy". NASA plans to include the technique that I devised for large-scale target search into their portfolio of technologies for border patrol and security.

MEMBERSHIPS

- **Higher Education Academy (HEA) Fellow**
  (March 2019 – present)
- Invited member of the **UNESCO Chair in ICT4D**
  10th top Global Think Tank in Science and Technology (University of Pennsylvania's influential "Go to Think Tanks" Index Report)
  (2015 – present)
- **Licensed Engineer,** Italian State Society of Professional Engineers
  (2003 – present)

TEACHING EXPERIENCE

- 2018/19: **16.410 & 16.413: Principles of Autonomy and Decision Making**
  MIT, Aeronautics and Astronautics
  - Jointly taught with Prof Brian Williams

- Lectures: Space Search, A*, Activity Planning, Path Planning, Probabilistic Planning, Markov Decision Processes, Games, Constraint Programming, Mathematical Programming, Probabilistic Reasoning, Scheduling

- 2016/17 – 2017/18 – 2018/19: **CS5870: Wireless Sensor and Actuator Networks**
  Royal Holloway University of London, Dept. of Computer Science, MSc in IoT
    - New core course for the MSc in IoT
    - Full course design and preparation of material
    - Lectures: elements of graph theory, routing, topology control, data gathering and aggregation, mobility, tracking
    - Labs: implementation of application-driven WSNs with Arduinos and ZigBee radios
    - Video about my contribution in the IoT MSc: https://youtu.be/8TG5h5GVZYc

- 2016/17 – 2017/18: **CS5840: Interconnected Devices**
  Royal Holloway University of London, Dept. of Computer Science, MSc in IoT
    - New core course for the MSc in IoT
    - Full course design and preparation of material
    - Lectures: introduction to the IoT, embedded system design and implementation, hardware and software co-design, elements of electrical engineering
    - Labs: the Arduino environment, programming for Arduino, debugging, implementation of interconnected systems by using Arduino
    - Video about my contribution in the IoT MSc: https://youtu.be/8TG5h5GVZYc

- 2015/16: **CS1840 - Internet Services**
  Royal Holloway University of London, Dept. of Computer Science, BSc in Computer Science
    - First-year course, 120 students
    - Lectures: the Internet stack, web technologies, network security
    - Labs: HTML, XML, JavaScript, PHP, Java Socket Programming

- 2015: **Crash Course in Autonomy: Programming Cognitive Robots**
  MIT, Aeronautics and Astronautics Department
    - Jointly taught with other MIT staff members
    - Lectures: autonomous surveillance missions, search-and-tracking, unmanned aerial vehicles (UAVs), micro aerial vehicles (MAVs), temporal and metric planning

- 2011/12: **Research Methods in Learning Technologies**
  Birkbeck University of London, Dept. of Computer Science, MSc in Learning Technologies
    - Jointly taught with Prof. A. Poulovassilis
    - Lectures: educational games, user modelling, cognitive modelling, modelling of affects, intelligent learning environments

- 2011/12: **Pedagogy, Adaptivity and Technology**
  Birkbeck University of London, Dept. of Computer Science, MSc in Learning Technologies
    - Jointly taught with Dr K. Porayska-Pomsta
    - Lectures: User modelling, basics of probability theory, Bayesian Networks

- 2011/12 and 2010/11: **Learning and Teaching with Technology**
  Birkbeck University of London, Dept. of Computer Science, MSc in Learning Technologies
    - Jointly taught with Dr K. Porayska-Pomsta
    - Lectures: Educational games, user modelling, cognitive modelling, modelling of affects, intelligent learning environments

- 2004/05: **Automated Reasoning**
  University of Rome "La Sapienza" (Italy), Faculty of Engineering
  - Teaching assistant

- 2003/04: **Programming Languages I** and **II**, **Operating Systems**
  University of Trento, Faculty of Engineering (Italy), Faculty of Engineering
  - Teaching assistant

POSTDOC and STUDENT SUPERVISION

- Supervision of **four postdoctoral fellows at Royal Holloway University of London**
  These fellows are funded by my Innovate UK projects "Connect-R", "Prometheus" and "MIMRee". They work together as a team.
  (April 2019 – present)

- Supervision of **one postdoctoral fellow** based at **University of Toronto**
  Project: *Autonomous Search-and-Tracking via Multiple Coordinated Drones*
  (April 2018 – present)

- Supervision of **two postdoctoral fellows** at **King's College London**
  Project: *Automated Plan-Based Policy-Learning for Surveillance Problems*
  (September 2015 – November 2016)

- Supervision of PhD students
  - Royal Holloway University of London
    - Mohammadhadi Sarajchi
      Project: *Effective use of drones in emergency response – A socio-technical perspective* (Leverhulme Magna Carta Doctoral Training)
      (January 2018 – present)
    - Ozge Turkoglu
      Project: *AI Planning for Disaster Response*
      (March 2019 - present)
  - University of Toronto
    - Kyle Booth
      Project: *Autonomous Search-and-Tracking via Multiple Coordinated Drones*
      Co-supervision with Prof. Christopher Beck
      (April 2018 – present)

- Supervision of final projects of third-year BSc students and MSc students
  - MIT, CSAIL (July 2018 – present)
  - Politecnico di Torino (March 2019 – present)
  - Royal Holloway University of London (September 2015 – present)
  - UCL, Knowledge Lab (January 2009 – August 2012)

PHD EXAMINING

- External Examiner:
  PhD Candidate: Alessandro Umbrico
  Thesis: *Timeline-based Planning and Execution with Uncertainty: A Hierarchical Approach*
  Roma Tre University, Department of Computer Science (March 2017)

ADMINISTRATIVE POSITIONS OF RESPONSIBILITY

- **Director of MSc in Artificial Intelligence,** Royal Holloway University of London (November 2017 – present)
  - Design, development and official proposal for a new MSc in AI, approved in November 2017 with a start in academic year 2019/20

- **Equality & Diversity Champion,** Department of Computer Science, Royal Holloway (September 2015 – present)
  - October 2016: **Bronze Award** for the Department of Computer Science

- Member of the **Admission Team** for the Masters in the Department of Computer Science, Royal Holloway (September 2015 – present)

- Member of the **Plagiarism Committee** of the Department of Computer Science, Royal Holloway (September 2015 – present)

- **President of Early Career Researcher Forum,** School of Natural and Mathematical Sciences, King's College London (March 2014 - August 2015)

- Member of **Early Career Researcher Representatives Committee,** King's College London (March 2014 - August 2015)

- Member of **Faculty Research Committee**, School of Natural and Mathematical Sciences, King's College London (March 2014 - August 2015)

- Member of **Departmental Research Committee,** Department of Informatics, King's College London (March 2014 - August 2015)

DEVELOPMENT ACTIVITIES

- **CAPITAL** (Postgraduate Certificate in Academic Practice in Teaching and Learning, accredited by the Higher Education Academy) (September 2015 – present)
- Inclusive Leadership Programme (December 2016)
- Mentoring Circles Scheme (January 2017)
- Workshops on REF, Impact and Open Access (September 2016 – November 2017)

REFERENCES

- Professor Fabio Fagnani, Direttore del Dipartimento di Scienze Matematiche (DISMA), Politecnico di Torino
  Email: fabio.fagnani@polito.it Tel: +39 011 0907509

- Professor José Fiadeiro, Dean of Science, Head of the Department of Computer Science Royal Holloway University of London
  Email: Jose.Fiadeiro@rhul.ac.uk Tel: +44 1784 443430

- Professor Derek Long, Department of Informatics
  King's College London
  Email: derek.long@kcl.ac.uk Tel: +44 +44 207 848 8713

PUBLICATIONS

I have published more than 40 peer-reviewed papers. In the last two years, I have published four papers in top-ranked journals: ***Artificial Intelligence Journal*** (IF 5.786, generally accepted as the premier international journal in AI); ***Journal of Artificial Intelligence Research*** (generally considered one of the two top journals in AI with AIJ), ***Autonomous Robots*** (IF 3.171); and ***ACM Transactions on Computer-Human Interaction***, where my paper is one of the top downloaded articles since its publication in December 2018. I have also published two journal papers on AI-based serious games for children with autism, each with more than 100 citations. I regularly publish articles in top conferences in AI such as the *AAAI Conference on Artificial Intelligence* and *ICAPS – International Conference on Automated Planning and Scheduling.* In my area, the top conferences are highly selective and more highly regarded than most journals.

REFEREED JOURNAL ARTICLES

Autonomous Target Search with Multiple Coordinated UAVs
Chiara Piacentini, Sara Bernardini and Chris Beck
Journal of Artificial Intelligence Research (JAIR). In press.
(JAIR is generally regarded as one of the two most prestigious journals in AI together with AIJ.)

Extracting Mutual Exclusion Invariants from Lifted Temporal Planning Domains
Sara Bernardini, Fabio Fagnani and David E. Smith
Artificial Intelligence Journal (AIJ) (5-year impact factor: 5.786), Volume 258, Pages 1-65, May 2018, Elsevier.
(Artificial Intelligence, which commenced publication in 1970, is now the generally accepted premier international forum for the publication of results of current research in this field.)

Blending Human and Artificial Intelligence to Support Autistic Children's Social Skills
Kaska Porayska-Pomsta, Alyssa Alcorn, Katerina Avramides, Sara Bernardini, et al.
ACM Transactions on Computer-Human Interaction. 25 (6). 35 1-35. December 2018. ISSN 1073-0516
(Since its publications in December 2018, this is the top downloaded article of the journal.)

Combining Temporal Planning with Probabilistic Reasoning for Autonomous Surveillance Missions
Sara Bernardini, Maria Fox and Derek Long
Autonomous Robots (2017) 41: 181. Springer. 5-year impact factor: 4.095
(Autonomous Robots in one of the top journals in Robotics.)

ECHOES: An Intelligent Serious Game for Fostering Social Communication in Children with Autism
Sara Bernardini, Kaska Porayska-Pomsta, Tim Smith
Information Sciences, Elsevier, Volume 264, 2013, pp.41-60. 5-year impact factor: 4.732 *(This paper has 140 citations.)*

Developing Technology for Autism: an Interdisciplinary Approach
Kaska Porayska-Pomsta, Chris Frauenberger, Hellen Pain, Thusha Rajendran, Tim Smith, Rachel Menzies, Mary Ellen Foster, Alyssa Alcorn, Sam Wass, Sara Bernardini, Katerina Avramides, Wendy Keay-Bright, Jingying Chen, Annalu Waller, Karen Guldberg, Judith Good and Oliver Lemon
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