

COSMIN BADEA

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RESEARCH

2014 - ongoing: Artificial Intelligence & Ethics Research

Imperial College London

- **8 years of experience** in individual and collaborative research in Artificial Intelligence (AI)
 - Have initiated more than **8 active research collaborations** in AI, all having deliverables
 - Collaborating with fellow researchers, including the head of Logic & AI, a Philosophy professor and several clinicians, on **interdisciplinary work on AI, automated decision-making and Ethics in AI**
 - **Supervised 2 successful individual research projects**, most recently in 2021
 - Have attended many academic events (giving talks at some of them) including the following **conferences**: AAAI Fall Symposium, AIES, AI UK conference, World Ethical Data Forum, Microsoft Include 2021, Founders' Summit 2021, ECSQARU, POPL, PLDI
 - Have demonstrated and gained expertise in project management, leadership, presentation and communication skills; through courses (see Skills & Training), academic writing, working with deadlines and milestones
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SELECTED PAPERS & PUBLICATIONS (venue)

2022 Bolton, W.J., Badea, C., Georgiou, P., Holmes, A. and Rawson, T.M. Developing Moral AI to Support Antimicrobial Decision-Making. „**Nature Machine Intelligence**” journal. Accepted, forthcoming.

2022 Badea, C. Have a break from making decisions, have a MARS: The multi-valued action reasoning system. **AI-2022**.

2022 Badea, C., and Artus, G. Morality, Machines, and the Interpretation Problem: A Value-Based, Wittgensteinian Approach to Building Moral Agents. **AI-2022** (conference) & LNCS Springer (proceedings). Forthcoming, accepted.

2022 Post, B., Badea, C. and Brett, S. Breaking Bad News in the Era of Artificial Intelligence and Algorithmic Medicine. „**AI and Ethics**” journal. Springer. Accepted, forthcoming.

2021 Hindocha, S., and Badea, C. Moral exemplars for the virtuous machine: the clinician's role in ethical artificial intelligence for healthcare. „**AI and Ethics**” journal. Springer.

2021 Badea, C., and Gilpin, L.H. Establishing Meta-Decision-Making for AI: An Ontology of Relevance, Representation and Reasoning. **AAAI 2021 Fall Symposium** (Conference).

2017 Badea, C., and Kuhn, L. The Multi-valued Action Reasoning System (MARS) - A value-based decision-making framework for practical reasoning in Machine Ethics. (draft)

FELLOWSHIPS, PRIZES AND AWARDS:

- Lead Research Fellow – World Ethical Data Forum (2021)
 - Awarded a rare EPSRC Doctoral Training Account Studentship (2014-2018)
 - ACM SIGPLAN/PLMW Scholarship worth \$1,760 for attending POPL '14 research conference (2014)
 - Imperial College Scholarship for attending POPL '13 research conference (2013)
 - C Programming Prize – for the best group entries to the 2011 C Programming Competition (2012)
 - Deutsche Bank Prize - for best overall “Topics in AI” group project (2011)
 - The Morgan Stanley IT Prize (2011)
 - Faculty of Engineering Dean's List - for the top 10% of the class in the 2010/11 academic year (2011)
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PROFESSIONAL APPOINTMENTS

October 2021 - ongoing: Lecturer & Course Leader in „Contemporary Philosophy”

Imperial College London

- Course aimed at Science/Engineering 3rd and 4th year Undergraduates, aiming to present the most relevant developments in 20th and 21st century Philosophy; includes Philosophy of AI and AI Ethics;

September 2019 - ongoing: Lecturer & Course Leader on “Ethics in AI”

Imperial College London

- "Ethics, Privacy, AI in Society" course (aimed at Master's and PhD students) in the Department of Computing
- Responsible for creating a brand-new course, leading the team, organising content into a cohesive proposal; designed novel teaching materials and handled relevant administrative aspects
- Delivered my lectures to a cohort made up of all MSc AI and PhD students from the “AI4Health” Centre; designed new evaluation methods for the course; inspired some students to pursue PhD in this area
- Received outstanding feedback from students and staff. Received a rating of 95.45 out of 100 in student surveys

February-March 2019: Stand-in lecturer: Philosophy, Ethics, Philosophy of Mind

Imperial College London

- my outstanding performance led to job offer by the head of department (see “Contemporary Philosophy” above)
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INDUSTRY WORK

March 2020 – July 2021: Co-founder and Director; March 2020 – July 2020: CEO

- Founded the online digital platform “miscateacasa.com” in March 2020, and was acting CEO
- We grew to 9 contracted paid partners offering over 50 weekly classes, and over 1000 monthly bookings

April – September 2013: Technology Analyst – Software Engineering (Equity Derivatives) **Morgan Stanley**

- Built a centralized overview system for the RFQ team; used Scala and Java to build the backend, while employing REST, HTML, CSS, Ivy, Spring, Javascript to put together a rich web interface to access the system
- Planned using milestones, timelines, and the JIRA issue tracking system, and employed Agile programming

July – September 2012: Technology Analyst – Software Engineering (Commodities Product Group) **Morgan Stanley**

- Was assigned a greenfield project; went through all stages of software development: analysis, design & specification, planning, implementation, testing and turning over.
- Worked on a real-world project that added value: I built a solution (using Java and SQL) to pull climatic data from an FTP server, persist it to our database and then publish it to the interested parties
- Very favourable feedback and reviews from manager, coworkers and HR department, was offered a new position

OTHER WORK AND EXPERIENCE

2021 – ongoing: Member of Steering Committee for COGSAT AAAI Fall Symposium

- Outstanding feedback for my paper and presentation at this conference led to my joining the steering committee

2020 – ongoing: Member of Reviewer Board for “AI and Ethics” academic journal (Springer)

2019: co-organiser of EESTEC deCodeIT Advanced Workshop (Bucharest, Romania)

2014 – 2018: Year Representative for Computing students doing PhD

- Attended administrative staff-student Committee meetings where I expressed and solved important concerns

2014 – 2019: Graduate Teaching Assistant

- Assisted with tutorial sessions and marking in Logic, Discrete Mathematics, Databases, Reasoning about Programs, Knowledge Representation, Introduction to Artificial Intelligence, Systems Verification
- Helped students improve their problem-solving skills, subject matter knowledge, which improved my leadership

2012 - 2014: Undergraduate Teaching Assistant for Personal Mathematics Tutoring (PMT)

- Collaborating with Prof. Murray Shanahan to hold weekly tutorials and in charge of some of the marking

2011 - 2012: Undergraduate Year Representative for Computing students

2010: Participated in the “Imperial Apprentice Challenge” at the Imperial College Business School:

- Selected as part of 16 finalists from the entire University; worked with a team, being team leader on a task
- Came up with a marketing idea, strategy and business plan; gave a formal business presentation

2006-2010: Member (and, in the final year, **co-president**) of the Student Government and class leader

- Represented many classes, proposed, organized and saw through as project manager many activities.

EDUCATION

2014-2018; interruption due to health; 2022-ongoing: PhD Student, Computing **Imperial College London**

- Supervised by the head of the section of “Logic and Artificial Intelligence”, Prof. Marek Sergot
- Research into artificial moral agents, ethics and practical reasoning, rule-based AI, value-alignment

2010-2014: MEng Computing (1st Degree with Honours) - Distinction

Imperial College London

2006-2010: Intensive Computer Science class in “Mihai Viteazul” high school (first in Romania by entry grades)

2010: Romanian Baccalaureate: 10 in Mathematics, 9.8 in Physics (equivalent UK GCE Advanced Level: A*A*)

PERSONAL SKILLS & TRAINING

- **Selected Programming Languages:** Java (strongest), Scala, ASP, Prolog, C++, C, Haskell, SQL, JavaScript
- **Leadership and Project Management skills:** can handle any project with confidence, deliver with efficiency, handle client interactions and team dynamics, manage and lead people to success; courses: “Preparing for leadership”, “Negotiation Skills”, “Project Management”, “Time Management”, “Leaders of the Third Millennium”
- **Communication skills:** allow me to convey information accurately and efficiently: graduate courses such as “Writing for Publication”, “Networking”, “Public Engagement” (masterclass), “Media Workshop”
- **Philosophy:** allows me to better clarify requirements, challenge assumptions, bring in-depth analyses, a keen insight and novel approaches: courses such as “Philosophy of the Mind”, “Ethics”, the Practical Reasoning series
- **Languages:** Romanian (native), English (level C2 on CEF), French (basic); am delighted to learn more

INTERESTS AND ACHIEVEMENTS

- I have a strong interest in puzzles and logic problems, and joined Mensa, scoring 100% in the IQ entry test
- Societies Membership: Fencing, Philosophy, Debate, Dancing, Muay Thai, Investment, Art, Board Games, Tennis
- Enjoy travelling having visited more than 15 countries which allowed me to experience many diverse cultures
- Started fencing & within the year I won a gold, two silver & two bronze medals, a cup and ranked 356th nationally
- Hobbies: philosophy, poetry (published), ballroom & Latin dancing, video games, swimming, music (guitar, piano)