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PhD program in Computing Sciences and Artificial Intelligence (CS-AI)	
Research interests and Faculty	The PhD program in **Computing Sciences and Artificial Intelligence** at Bocconi University is a 4-year, full-time program taught in English offered by the Department of Computing Sciences. It aims to train independent researchers with strong mathematical and computational foundations, equipped to advance fundamental research in computer science and artificial intelligence. During the first two years of the program, PhD students must complete eight courses. With the Program Director's approval, they may distribute the courses between the two years, provided that they complete at least four in the first year. The courses build theoretical and empirical expertise in the mathematical and computational foundations of computer science and artificial intelligence, enabling students to begin their research as early as possible. The third and fourth years are dedicated to original research and dissertation writing. Research areas include theoretical computer science, algorithms and computational complexity, cryptography, optimization, and the foundations and applications of machine learning. Further areas of activity cover natural language processing, computer vision, computational neuroscience, computational biology and bioinformatics, and the physics of complex systems. This breadth connects fundamental questions about computation and learning with problems arising in the life sciences and physical sciences. The Department brings together an international faculty with expertise spanning computer science, mathematics and physics, including numerous recipients of ERC grants. Its research environment encourages collaboration across disciplinary boundaries, supported by seminars, reading groups and scientific exchange. The program is designed for highly motivated students seeking research careers in universities, research institutes and industry. Applications are encouraged from candidates with a strong quantitative background and graduate training in Computer Science, Mathematics, Physics, Engineering, Statistics, Data Science or related fields.

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	For more information about the program, please visit the website: PhD in Computing Sciences and Artificial Intelligence
Opening date	3 November 2026
Closing date	8 February 2027
Enrollment date	Refer to Art. 10 "Enrollment deadlines" of the present Call for details
Fellowship	€ 27,000 per year for four years Students can benefit from an extension with fellowship up to six months (see art.3)
Starting date	1 September 2027
Duration	4-year, full-time program
Selection Criteria (see art. 5)	The assessment is based on a candidate's: • Curriculum Vitae (mandatory); • Academic Records (mandatory); • Statement of purpose (mandatory); • Up to three reference letters (not mandatory). The **assessment criteria** are as follows: • a maximum of **60 points** for the applicant's curriculum vitae and academic records; • a maximum of **40 points** for statement of purpose and reference letters. The Admission Board may decide to conduct a brief online interview or request video-recorded interview through the admission portal to clarify aspects of a student's qualifications. No additional points are given to the interview. **A minimum total score of 60 points is required to be eligible for admission.**
Results	No later than 15 March 2027
Contact and technical support	phdadmission@unibocconi.it http://www.unibocconi.eu/admissionphd

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CS-AI Project-based TEF fellowship TOLD-Agents Thinking Out Loud with AI Agents in Everyday Life	
Principal Investigator	Prof. Debora Nozza
Places available with project-based TEF fellowship	1
Project overview	Personal AI agents are moving from chat windows into everyday life. Recently launched systems such as OpenAI's dots and Meta's Muse act on users' behalf across everyday tasks and can be reached by voice, so that interactions with AI are increasingly **spoken rather than typed**. This shift changes not only the channel but the nature of the interaction: speech is faster and more spontaneous, carries hesitations and self-corrections, and reveals information about the speaker, such as age, accent, and emotional state, that written text does not. The project extends **TOLD (Thinking Out Loud)**, a TEF-funded postdoctoral project showing that voice-based annotation yields richer and more informative human feedback than written text. Where TOLD studies voice as a channel for collecting data, TOLD-Agents studies voice as the channel through which people will increasingly interact with AI agents. Building on TOLD's data collection framework, the project will collect paired spoken and written requests in which the same participants express the same everyday intents in both modalities, enabling controlled comparisons of how people communicate, what models infer about them and how outcomes change. The research lies at the intersection of NLP, speech processing and responsible AI, with a focus on fairness and on the societal impact of language technologies.
Research objectives	The project investigates how the shift from written to spoken interaction with AI agents changes communication, model behaviour and risks. It pursues four objectives: – **Spoken vs written interaction**: characterize how

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	requests to agents on everyday tasks differ in form, content and specificity when spoken rather than written, and whether voice leads people to delegate new kinds of tasks to agents. – **Hesitation as a signal of uncertainty**: building on TOLD's use of disfluencies (e.g., filled pauses, self-repairs) as markers of uncertainty, assess whether agents detect user hesitation and use it to calibrate their behaviour, for instance by asking for clarification before acting, or instead ignore it. – **Voice-based inferences and quality of service**: measure what speech-enabled models infer, implicitly or explicitly, about the speaker (e.g., gender, age, accent, socio-economic background) and whether these inferences affect outcomes when they should not; quantify performance gaps across accents, regional varieties, non-native and older speakers, comparing cascaded (speech-to-text) and end-to-end speech models. – **Interaction risks**: study whether voice amplifies anthropomorphization, over-reliance and sycophancy, considering both the user's voice and the agent's own synthetic voice (e.g., gender, accent, emotional charge) and its effect on users' trust and compliance. Across all objectives, the project pays particular attention to **populations for whom voice opens access to AI agents**, such as people with low AI literacy, visually impaired and older users: an opportunity for inclusion, but also groups potentially more exposed to the risks above. **Expected results**: an openly released corpus of paired spoken and written interactions with AI agents on everyday tasks; evaluation protocols for the fairness and safety of spoken agents across demographics; human studies on trust and reliance; and publications in top-tier NLP, speech, HCI and responsible-AI venues (e.g., ACL, EMNLP, Interspeech, CHI, FAccT).
Profile of the candidate	The ideal candidate holds (or is about to obtain) a Master's degree in Computer Science, Artificial Intelligence, Computational Linguistics, Data Science, or a related field,

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	and is motivated to pursue research at the intersection of NLP, speech, and responsible AI. **Required**: – Solid background in machine learning and NLP; – Strong programming skills in Python and familiarity with NLP frameworks (e.g., PyTorch, Hugging Face); – Excellent command of English, both written and spoken. **Preferred**: – Experience with speech processing or spoken-language data; – Interest in bias, fairness and the societal impact of AI; – Interest in experimental design and data collection with human participants (e.g., user studies, crowdsourcing); – Prior research experience (e.g., publications or shared-task participation).