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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 **BioCore Pathomics** Context-Aware Biological Knowledge for Scalable AI Reasoning in Pathomics-Driven Precision Medicine	
Principal Investigator	Prof. Francesca Buffa
Places available with project-based TEF fellowship	1
Project overview	Computational drug response prediction offers a promising approach to optimize drug selection and personalize therapeutic strategies, potentially improving patient outcomes and reducing ineffective treatments. Many existing methods, including our own, rely on transcriptomic profiles derived from bulk or single-cell RNA sequencing to characterize cellular states and predict drug-induced responses. However, sequencing costs and processing times can limit their clinical accessibility and delay therapeutic decisions. In contrast, pathomics could leverage routinely acquired H&E slides to extract clinically relevant information, offering a more accessible and scalable approach to patient stratification and therapeutic decision-making. This motivates AI-based computational pathology approaches to infer molecular information from routinely available histological images, potentially enabling faster, more accessible, and scalable drug response prediction to support timely treatment decisions. To adress this, the project aims to develop an AI framework transforming routinely acquired histopathology images into actionable biological insights and therapeutic predictions.
Research objectives	The research objectives of Biocore Pathomics are: (i) to build efficient models for extracting biologically and clinically relevant information from hematoxylin and eosin (H&E)-

	stained tissue sections and (ii) to predict the efficacy of individual drugs and drug combinations in inducing a desired biological response in a given tissue sample. To achieve these objectives, the project will build on BioCore, a broader TEF-funded research initiative on agentic biology that aims to develop intelligent systems capable of orchestrating computational models to address complex biological questions. Specifically, the project will leverage an intelligent BioCore orchestrator to coordinate and integrate multiple knowledge-based and simulation-driven pathomics models. By combining deep learning, computational pathology, and computational biology with established biological knowledge, predictive modelling, and mechanistic simulations, the framework will support evidence-based decision-making and facilitate the discovery of novel therapeutic strategies. Furthermore, continuous human–AI interaction will foster collaborative scientific reasoning, enable expert-guided interpretation, and support the adaptation of computational models to specific clinical contexts.
Profile of the candidate	The ideal candidate should hold a Master's degree in Computer Science, Artificial Intelligence, Data Sciences, or a related quantitative discipline, with a strong background in machine learning and deep learning applied to biomedical data. Research experience in computational biology and computer vision is highly desirable, particularly in foundation models for pathomics data, single-cell and spatial RNA sequencing, and representation learning. Proficiency in Python and deep learning frameworks such as PyTorch or TensorFlow is expected. Familiarity with single-cell foundation models, vision and pathomics foundational models, and GPU computing, together with scientific publications and interdisciplinary

	biomedical research experience, will be considered an advantage.