



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 39th cycle

Research Area n. 1 - Computer Science and Engineering

PNRR 117 Research Field: ALGORITHMIC TRADING RESEARCH

Monthly net income of PhDscholarship (max 36 months)

€ 1400.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field	The research aims to develop Reinforcement Learning algorithms for intraday trading and market making, extending current approaches to optimize transaction costs and enhance the input feature representations. Motivations include improving trading strategy performance, reducing transaction costs and risks as well as exploring new input data processing techniques.
Methods and techniques that will be developed and used to carry out the research	Methodologies involve experimenting with state-of-the-art and developing new reinforcement learning algorithms for strategy training and more in general, statistical and machine learning approaches for input feature development.
Educational objectives	During the research, the candidate will develop skills to explore the state of the art and to identify which topics still need to be covered and can be advanced by the research project. Furthermore, the PhD student will learn to communicate the achieved research results both orally and through publications.
Job opportunities	Nowadays, completing a PhD in the machine learning field gives unique job opportunities. Recent PhD graduates have found employment as post-doc in the most prestigious universities and recent centers in Europe or have become researchers in one of the top tech



	companies. In particular, financial companies will be very interested in hiring a PhD with a strong background in machine learning applied to financial topics.
Composition of the research group	5 Full Professors 4 Associated Professors 10 Assistant Professors 30 PhD Students
Name of the research directors	prof. Marcello Restelli

Contacts	
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	700.0 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	Intesa Sanpaolo S.p.A.
By number of months at the company	6
Institution or company where the candidate will spend the period abroad (name and brief description)	King's College London
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student.</p> <p>TEACHING ASSISTANTSHIP: availability of funding in recognition of supporting teaching activities by the PhD student There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.</p>



COMPUTER AVAILABILITY: individual use.

DESK AVAILABILITY: individual use.