

PhD in Computer Science, Mathematics and Physics

University of Udine - Italy

The course in few figures

- Instituted in 2014 as successor to previous PhD programmes in CS and M&P
- Partnership with Fondazione Bruno Kessler – Trento since Spring 2017 (active with PhD Cycle XXXIII)
- Three year duration
- Call: June-July
- Admission: September
- PhD cycle XXXIV, starting November 2018
- PhD thesis to be submitted by the end of 3rd year
- Graduation in spring of the following year



Research Areas - Computer Science

Algorithms
Automata
Logics

Bioinformatics
Medical Informatics

Human-Computer Interaction

Artificial Vision
Real-Time Systems

Data Science
Information Retrieval
Machine Learning

Knowledge Representation
Automated Reasoning



Research Areas - Mathematics

Algebra
Topology

Dynamical Systems

Mathematical Logic

Algebraic Geometry
Number Theory

Mathematical Analysis

Numerical Analysis
Mathematical Epidemiology

Research Areas - **Physics**

Astrophysics

Particle Physics

Semiconductor
and Scintillator-based
Radiation Detectors

Fundamental Interactions

Physics Education

Simulation of
Bio- and Nano-Systems

Supervisors: Computer Science

- Stefano Burigat - Mobile HCI, Information Visualization, Interface Design, Virtual Reality, ...
- Luca Chittaro - Virtual Reality, Serious Games, Health and Safety, Persuasive Technology, ...
- Antonina Dattolo - Inclusive Web design, Semantic and Social Web, ICT for Cultural Heritage
- Agostino Dovier - Logic Programming, Knowledge Representation, GPGPUparallelism, ...
- Federico Fontana - Music Interfaces, Interactive Sound Processing, Sonic Interaction Design, ...
- Gian Luca Foresti - Computer Vision, Neural Networks, Data and Information Fusion, ...
- Massimo Franceschet - Network science, Bibliometrics, Logic, Temporal Knowledge, ...
- Oswald Lanz - Computer Vision, Camera Networks, Object Tracking, Audio Visual Tracking, ...
- Stefano Mizzaro - Web Information Retrieval, Crowdsourcing, Data Science, Social Computing, ...
- Angelo Montanari - Temporal logics for computer science, Spatio-temporal databases, Big data, ...
- Carla Piazza - Formal Verification, Hybrid Systems, Model Checking Algorithms, Systems Biology, ...
- Alberto Policriti - Computable Set Theory, Algorithms, Bioinformatics, Computational Biology, ...
- Giuseppe Serra - Machine Learning, Neural Networks, Pattern Recognition, ...

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UNIVERSITÀ
DEGLI STUDI
DI UDINE

Supervisors: **Mathematics**

Dimitri Breda - Numerical Methods; Dynamical Systems; Eigenvalues Approximation, Delay, ...

Pietro Corvaja - Diophantine Geometry, Number Theory

Dikran Dikranjan - Topological groups, Duality, Entropy, Categorical Topology and Algebra, ...

Anna Giordano Bruno - Topological Groups, Algebraic Entropy, Pontryagin Duality, ...

Alberto Marcone - Reverse Mathematics, Weihrauch Degrees, WQOs and BQOs, ...

Stefano Merler - Mathematical Epidemiology, Computational Epidemiology, Dynamical Systems

Rossana Vermiglio - Numerical Methods, Delay Equations, Numerical Stability and Bifurcation

Fabio Zanolin – Dynamical Systems, Chaos Theory, Nonlinear Analysis, Fixed Points

Francesco Zucconi – Algebraic Geometry, ...



Supervisors: **Physics**

Barbara De Lotto - Astroparticle Physics, Very High Energy Gamma Astrophysics, ...

Federico Fogolari - Molecular Modeling, Structural Biology, Biomolecular Simulations, ...

Paolo Giannozzi - Methods and Software for Electronic-structure Calculations, ...

Lorenzo Gianni Santi - Particle Physics, Detector R&D; Physics Education (with M. Michelini), ...

Andrea Vacchi - X-ray and High-Energy Astrophysics, Semiconductor based Detectors Development, ...

Funding

- Standard scholarship: € 15.343,28 per year
- Supplements per month abroad: € 639 (max 6 months)
- About € 500 for schools... (1st year)
- About € 3000 for traveling, schools... (2nd & 3rd year)
- Specific scholarships (Bruno Kessler, industries)
- Other research funds provided by the Supervisor and his/her Lab/Institute



Research Labs

Laboratory	Supervisors in the Lab	Web Address
Artificial Vision & Real-Time Systems	Gian Luca Foresti (Head)	avires.dimi.uniud.it
Bioinformatics, Verification & Parallel Computing	Alberto Policriti (Head) Carla Piazza	bioinf.dimi.uniud.it
Computational Dynamics Laboratory	Dimitri Breda (Head)	cdlab.uniud.it
Constraint Logic Programming	Agostino Dovier (Head)	clp.dimi.uniud.it
Context-Aware and Mobile Systems Laboratory	Stefano Mizzaro (Head)	smdc.uniud.it
Data Science	Angelo Montanari (Head) Massimo Franceschet	datasciencelab.dimi.uniud.it/en
Dynamical Processes in Complex Societies	Stefano Merler (Head)	dpcs.fbk.eu
Human-Computer Interaction	Luca Chittaro (Head) Stefano Burigat Federico Fontana	hcilab.uniud.it
Semantic, Adaptive and Social Web	Antonina Dattolo (Head)	sasweb.uniud.it
Silicon Detectors	Andrea Vacchi (Head)	atlasud.uniud.it/lab/
Technologies of Vision	Oswald Lanz	tev.fbk.eu

Scholarships

Year	Funding			Applications
	University	Industry	EU / Other	
2014	6	1	0	26
2015	6	1	4	13
2016	6	1	3	71
2017	4	2	7	46
2018	3	1	4	Call open

Few additional positions available without scholarship

Workplan

1st year

- Attend courses/schools (at least one outside the research discipline), also organized by the University
- Begin research activity
- End-of-the-year evaluation (learning activity & research plan)

2nd year

- Conclude the learning activity (three PhD credits must be taken)
- Research activity full immersion
- End-of-the-year evaluation (learning activity & research activity)

3rd year

- Conclude research and write PhD thesis
- Exhibition at the University (PhD Expo)
- Admission to the final exam (external review of the PhD thesis)

Beginning of the new year: discussion of the thesis, graduation



Additional info

General information, call for PhD:

- www.uniud.it/en/research/research-doctorate/phdstudies
- phd.dimi.uniud.it

Information about Fondazione Bruno Kessler:

- www.fbk.eu/en/

Contacting a supervisor from the PhD Board:

- www.dimi.uniud.it/la-ricerca/dottorato/informatica-e-scienze-matematiche-e-fisiche/collegio-dei-docenti/