

# Curriculum Vitae of Laura Azzimonti

## Personal information

Name **Laura Azzimonti**  
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Nationality Italian



## Current position

Dates from January 2020  
Position **Senior Researcher and Lecturer at IDSIA, Dalle Molle Institute for Artificial Intelligence, USI-SUPSI**  
Name of organization Department of Innovative Technologies - SUPSI, University of Applied Sciences of Southern Switzerland  
Duties Responsible of the “AI in Health and Life Sciences” research area. Research in the field of machine learning and bioinformatics to support translational research and to inform clinical decision-making. Development and software implementation of exact and approximate inference methods. Coordination of a group of three PostDoc Researchers. Management of project teams and relations with project partners. Teaching mathematical courses and preparation of teaching material. Supervision of bachelor, master and PhD students.

## Previous positions

Dates September 2017 – December 2019  
Position **Researcher and Lecturer** at IDSIA, Dalle Molle Institute for Artificial Intelligence, USI-SUPSI  
Dates February 2015 – August 2017  
Position **Researcher** at IDSIA, Dalle Molle Institute for Artificial Intelligence, USI-SUPSI  
Name of organization Department of Innovative Technologies - SUPSI, University of Applied Sciences of Southern Switzerland  
Duties Research in the field of Bayesian networks and Bayesian hierarchical models. Development and software implementation of approximate inference methods. Management of team work and relations with project partners. Teaching activities.  
Dates January 2014 – January 2015  
Position **Research Specialist Engineer** at MOXOFF srl, Milano, Italy  
Duties Development and software implementation of mathematical and computational methods for data analysis, signal processing and task optimization for customers in different business areas, including electronics, biomedicine, automotive, transport, ecology. Management of team work and relations with clients, including formulation of commercial offers and technical meetings.  
Dates January 2013 – January 2014  
Position **Post-doctoral fellowship researcher** at MOX – Department of Mathematics, Politecnico di Milano, Italy  
Research project “Advanced statistical and numerical models and methods for the analysis of functional and spatial data, with applications in life sciences and engineering”  
Duties Research in the field of non-parametric surface estimation methods and numerical optimization of partial differential equations, in particular development of numerical methods for data assimilation in boundary value problems. Software implementation and application to relevant biomedical studies. Study of the random properties, such as accuracy and precision, of estimated stochastic fields. Divulcation of results by public keynotes at international conferences and by technical, peer-reviewed publications.

## Teaching

Position	<b>Lecturer</b> , Calculus (Autumn and Spring semesters) for Data Science and Artificial Intelligence (English course) and Engineering at SUPSI
Dates	September 2017 – June 2022
Duties	Teaching theoretical and practical lessons. Preparation of teaching material, including formulation of exercises and preparation of solutions. Preparation, correction of exams and preparation of solutions as teaching material. Introduction of bi-weekly online quizzes in the iCorsi platform as diagnostic evaluation and teaching material; creation and implementation and debugging of questions and quizzes. Introduction of innovative teaching methods and test of their effectiveness by means of a design of experiment (and subsequent analysis). Support of the module responsible in adapting course contents and in accomplishing organizational duties.
Position	<b>Lecturer</b> , Pre-calculus (Autumn Semester) and Calculus (Spring Semester) for Engineering at SUPSI
Dates	September 2015 – June 2017
Duties	Teaching lessons and exercise lessons. Preparation of teaching material, including formulation of exercises. Preparation and correction of exams. Introduction of innovative teaching methods, e.g., adaptive online quizzes.
Position	<b>Lecturer</b> , Machine Learning - Workshop on Data Mining and Big Data in collaboration with Fondazione AGIRE
Dates	20 May 2016
Position	<b>Lecturer</b> , Data Mining for Business Intelligence for Management Engineering at SUPSI
Dates	September 2015 – February 2016
Duties	Teaching theoretical and practical lessons. Definition of detailed course program. Preparation of teaching material, including preparation of slides, formulation of exercises, preparation and correction of exams.
Position	<b>Teaching Assistant</b> , Statistics for Mechanical Engineering (English language) and Energy Engineering at Politecnico di Milano
Dates	March – July 2011 and 2013
Duties	Teaching exercise and laboratory lessons. Preparation of teaching material, including formulation of exercises and preparation of exams.

## Education

Dates	September 2017 - June 2019
Name and type of organization	SUPSI, University of Applied Sciences of Southern Switzerland
Title of qualification awarded	<b>Teaching qualification</b> , Certificate for Advanced Studies in Teaching.
Dates	January 2010 – December 2012
Name and type of organization	Politecnico di Milano
Title of qualification awarded	<b>PhD in Mathematical Models and Methods in Engineering</b>
Grade	Doctor Europaeus certification with merit.
Title of Thesis	"Blood flow velocity field estimation via spatial regression with PDE penalization" <a href="http://hdl.handle.net/10589/76565">http://hdl.handle.net/10589/76565</a>
Dates	September 2007 – December 2009
Name and type of organization	Politecnico di Milano
Title of qualification awarded	<b>Master's Degree in Mathematical Engineering, Specialization Scientific Computing and Statistics.</b>
Grade	110/110 cum laude.
Title of Thesis	"Modelli a effetti misti: teoria e applicazioni a dati longitudinali in ambito biologico" ("Mixed effects models: theory and applications to longitudinal biological data")

Thesis developed at the Laboratory of Modeling and Scientific Computing (MOX) of the Department of Mathematics - Politecnico di Milano in collaboration with San Raffaele Hospital, Milano

Dates	September 2004 – September 2007
Name and type of organization	Politecnico di Milano
Title of qualification awarded	<b>Bachelor's Degree in Mathematical Engineering, Specialization Scientific Computing.</b>
Grade	110/110 cum laude.
Title of Thesis	"Sistemi di urne interagenti e teoria dei valori estremi applicati alla modellizzazione della crescita tumorale: teoria e simulazioni" ("Interacting urn systems and extreme value theory for modeling tumor growth: theory and simulations")
Dates	1999–2004
Name and type of organization	Liceo Scientifico Arturo Tosi, linguistic specialization, Busto Arsizio
Title of qualification awarded	<b>Maturità Scientifica.</b>
Grade	100/100 cum laude

### Internship

2012-2013	Four-month internship in the "Scientific computing and uncertainty quantification" group (prof. Fabio Nobile), Department of Mathematics, EPFL, Lausanne.
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### Research Topics

current	Probabilistic graphical models, hierarchical Bayesian models, federated learning, physics-informed machine learning, variational inference, machine learning for personalised medicine.
past	Mathematical and statistical modelling, analysis of complex and high dimensional data, spatial statistics, analysis of repeated measures and longitudinal data, non parametric statistics, scientific computing, Finite Elements computing, data assimilation, inverse problems, PDE optimal theory, parallel computing.

### Indexed scientific publications

2024	<p>- D. Legouis, A. Rinaldi, D. Malpetti, G. Arnoux, T. Verissimo, A. Faivre, F. Mangili, A. Rinaldi, L. Ruinelli, J. Pugin, S. Moll, L. Clivio, M. Bolis, S. de Seigneux, L. Azzimonti, P.E. Cippà: "A transfer learning framework to elucidate the clinical relevance of altered proximal tubule cell states in kidney disease." <i>iScience</i>, 27(3), 109271, 2024. <a href="https://doi.org/10.1016/j.isci.2024.109271">https://doi.org/10.1016/j.isci.2024.109271</a></p> <p>- A. D'Agostino, C. Garbaza, D. Malpetti, L. Azzimonti, F. Mangili, H.C. Stein, R. del Giudice, A. Cicolin, F. Cirignotta, M. Manconi: "Optimal risk and diagnosis assessment strategies in perinatal depression: A machine learning approach from the life-ON study cohort." <i>Psychiatry Research</i>, 332, 2024. <a href="https://doi.org/10.1016/j.psychres.2023.115687">https://doi.org/10.1016/j.psychres.2023.115687</a></p>
2022	<p>- L. Azzimonti, G. Corani, M. Scutari: "A Bayesian Hierarchical score for structure learning from related data sets." <i>International Journal of Approximate Reasoning</i>, col. 142, 248-265, 2022. <a href="https://doi.org/10.1016/j.ijar.2021.11.013">https://doi.org/10.1016/j.ijar.2021.11.013</a></p> <p>- G. Delfanti, F. Cortesi, A. Perini, G. Antonini, L. Azzimonti, C. de Lalla, C. Garavaglia, M.L. Squadrito, M. Fedeli, M. Consonni, S. Sesana, F. Re, H., Shen, P. Dellabona, G. Casorati: "TCR-engineered iNKT cells induce robust antitumor response by dual targeting cancer and suppressive myeloid cells." <i>Science immunology</i>, 7(74), eabn6563, 2022. <a href="https://doi.org/10.1126/sciimmunol.abn6563">https://doi.org/10.1126/sciimmunol.abn6563</a></p> <p>- D. Ravasi, F. Mangili, D. Huber, L. Azzimonti, L. Engeler, N. Vermes, G. Del Rio, V. Guidi, M. Tonolla, E. Flacio: "Risk-Based Mapping Tools for Surveillance and Control of the Invasive Mosquito <i>Aedes albopictus</i> in Switzerland." <i>International journal of environmental research and public health</i>, 19(6), 3220, 2022. <a href="https://doi.org/10.3390/ijerph19063220">https://doi.org/10.3390/ijerph19063220</a></p>
2021	<p>- P. Berjano, F. Langella, L. Ventriglia, D. Compagnone, P. Barletta, D. Huber, F. Mangili, G. Licandro, F. Galbusera, A. Cina, T. Bassani, C. Lamartina, L. Scaramuzza, R. Bassani, M. Brayda-Bruno, J.H. Villafañe, L. Monti, L. Azzimonti: "The Influence of Baseline Clinical Status and Surgical Strategy on Early Good to Excellent Result in Spinal Lumbar Arthrodesis: A Machine Learning Approach." <i>Journal of Personalised Medicine</i>, vol. 11(12):1377, 2021. <a href="https://doi.org/10.3390/jpm11121377">https://doi.org/10.3390/jpm11121377</a></p>

- F. Bini, A. Pica, L. Azzimonti, A. Giusti, L. Ruinelli, F. Marinozzi, P. Trimboli: "Artificial intelligence in thyroid field. A comprehensive review." *Cancers*, vol. 13(19), 2021.  
<https://www.mdpi.com/2072-6694/13/19/4740>
- 2019** - K. Sechidis, L. Azzimonti, A. Pocock, G. Corani, A. Weatherall, G. Brown: "Efficient feature selection using shrinkage estimators", *Machine Learning Journal*, vol. 108, 1261-1286, 2019.  
<https://doi.org/10.1007/s10994-019-05795-1>
- L. Azzimonti, G. Corani, M. Zaffalon: "Hierarchical estimation of parameters in Bayesian networks", *Computational Statistics and Data Analysis*, vol. 137, 67-91, 2019. <https://doi.org/10.1016/j.csda.2019.02.004>
- E. Arnone, L. Azzimonti, F. Nobile, L.M. Sangalli: "Modeling spatially dependent functional data via regression with differential regularization", *Journal of Multivariate Analysis*, vol. 170, 275 - 295, 2019.  
<https://doi.org/10.1016/j.jmva.2018.09.006>
- 2017** - F. Gorini, L. Azzimonti, G. Delfanti, L. Scarfó, C. Scielzo, M.T. Bertilaccio, P. Ranghetti, A. Gulino, C. Doglioni, A. Di Napoli, M. Capri, C. Franceschi, F. Calligaris-Cappio, P. Ghia, M. Bellone, P. Dellabona, G. Casorati, C. de Lalla: "Invariant NKT cells contribute to Chronic Lymphocytic Leukemia surveillance and prognosis", *Blood*, vol. 129, no. 26, 3440-3451, 2017. <http://www.bloodjournal.org/content/129/26/3440>
- C. Cruder, D. Falla, F. Mangili, L. Azzimonti, L.S. Araújo, A. Williamon, M. Barbero: "Profiling the location and extent of musicians' pain using digital pain drawings", *Pain Practice*, 2017.  
<http://dx.doi.org/10.1111/papr.12581>
- 2016** - B. Guerciotti, C. Vergara, L. Azzimonti, L. Forzenigo, A. Buora, P. Biondetti, M. Domanin: "Computational study of the fluid-dynamics in carotids before and after endarterectomy", *Journal of Biomechanics*, vol. 49, 26–38, 2016. <https://doi.org/10.1016/j.jbiomech.2015.11.009>
- 2015** - L. Azzimonti, L.M. Sangalli, P. Secchi, M. Domanin, F. Nobile: "Blood flow velocity field estimation via spatial regression with PDE penalization", *Journal of the American Statistical Association, Theory and Methods Section*, vol. 110, no. 511, 1057–1071, 2015.  
<http://amstat.tandfonline.com/doi/abs/10.1080/01621459.2014.946036>
- 2014** - L. Azzimonti, F. Nobile, L.M. Sangalli, P. Secchi: "Mixed finite elements for spatial regression with PDE penalization", *SIAM/ASA Journal on Uncertainty Quantification*, vol. 2, 305–335, 2014.  
<http://epubs.siam.org/doi/abs/10.1137/130925426>
- L. Azzimonti, M.A. Cremona, A. Ghiglietti, F. Ieva, A. Menafoglio, A. Pini, P. Zanini: "BARCAMP: Technology Foresights and Statistics for the Future" in "Advances in Complex Data Modeling and Computational Methods in Statistics - Contributions to Statistics", Springer, eds: A.M. Paganoni, P. Secchi, 53–67, 2014.
- 2013** - L. Azzimonti, F. Ieva, A.M. Paganoni: "A new unsupervised classification technique through nonlinear non parametric mixed effects models" in "Complex Models and Computational Methods in Statistics - Contributions to Statistics", Springer, eds: Grigoletto, Lisi, Petrone, 1–11, 2013
- L. Azzimonti, F. Ieva, A.M. Paganoni: "Nonlinear nonparametric mixed-effects models for unsupervised classification", *Computational Statistics*, vol. 28, no. 4, 1549–1570, 2013  
<http://www.springerlink.com/content/5243v4w550168827/>
- 2011** - C. de Lalla, A. Rinaldi, D. Montagna, L. Azzimonti, M.E. Bernardo, L.M. Sangalli, A.M. Paganoni, R. Maccario, A. Di Cesare-Merlone, M. Zecca, F. Locatelli, P. Dellabona, G. Casorati: "Invariant Natural Killer T-cell reconstitution in pediatric leukemia patients given HLA-haploidentical stem cell transplantation defines distinct CD4+ and CD4- subset dynamics and associates with the remission state", *The Journal of Immunology*, vol. 186, no. 7, 4490–4499, 2011, <http://www.jimmunol.org/content/186/7/4490>

## Refereed conference proceedings

- 2022** - M. Scutari, C. Marquis, L. Azzimonti: "Using mixed-effects models to learn Bayesian networks from related data sets", *Proceedings of the 11th International Conference on Probabilistic Graphical Models, PMLR*, 186, 73-84, 2022. <http://proceedings.mlr.press/v186/scutari22a.html>
- 2020** - L. Azzimonti, G. Corani, M. Scutari: "Structure learning from related data sets with a hierarchical Bayesian score", *Proceedings of the 10th International Conference on Probabilistic Graphical Models, PMLR*, 138, 5-16, 2020. <http://proceedings.mlr.press/v138/azzimonti20a.html>
- 2017** - L. Azzimonti, G. Corani, M. Zaffalon: "Hierarchical Multinomial-Dirichlet model for the estimation of conditional probability tables", *IEEE 17th International Conference on Data Mining (ICDM)*, 2017.  
<https://doi.org/10.1109/ICDM.2017.85>

- E. Arnone, L. Azzimonti, F. Nobile, L. Sangalli: "A time-dependent PDE regularization to model functional data defined over spatio-temporal domains" in "Functional Statistics and Related Fields", Springer International Publishing, eds: G. Aneiros, E.G. Bongiorno, R. Cao, P. Vieu, 41–44, 2017.  
[https://doi.org/10.1007/978-3-319-55846-2\\_6](https://doi.org/10.1007/978-3-319-55846-2_6)
- 2014** - L. Azzimonti, L.M. Sangalli, P. Secchi: "Modeling prior knowledge on complex phenomena behaviors via partial differential equations", Proceedings of the 47th Scientific Meeting of the Italian Statistical Society 2014, Cagliari, June 11-13, 2014, <http://www2.mate.polimi.it/ocs/viewpaper.php?id=403&cf=33>
- 2013** - L. Azzimonti, L.M. Sangalli, P. Secchi: "Spatial regression with PDE penalization: an application to blood velocity field estimation", Proceedings of the 8th conference on statistical computation and complex systems, Milano, September 9-11, 2012, <http://www2.mate.polimi.it/ocs/viewpaper.php?id=403&cf=33>
- 2012** - L. Azzimonti, L.M. Sangalli, P. Secchi, M. Domanin: "PDE penalization for spatial fields smoothing", Proceedings of the 46th Scientific Meeting of the Italian Statistical Society 2012, Rome, June 20-22, 2012, <http://meetings.sis-statistica.org/index.php/sm/sm2012/paper/view/1962>
- 2011** - L. Azzimonti, F. Ieva, A.M. Paganoni: "A new unsupervised classification algorithm for nonlinear non parametric mixed effects models", Proceedings of the 7th conference on statistical computation and complex systems, Padova, September 19-21, 2011, [http://homes.stat.unipd.it/mgri/SCo2011/Papers/CS/CS-8/azzimonti\\_leva\\_paganoni.pdf](http://homes.stat.unipd.it/mgri/SCo2011/Papers/CS/CS-8/azzimonti_leva_paganoni.pdf)
- L. Azzimonti, M. Domanin, L.M. Sangalli, P. Secchi: "Surface estimation via spatial spline models with PDE penalization", Proceedings of the 7th conference on statistical computation and complex systems, Padova, September 19-21, 2011, [http://homes.stat.unipd.it/mgri/SCo2011/Papers/CS/CS-3/azzimonti\\_domanin\\_sangalli\\_secchi.pdf](http://homes.stat.unipd.it/mgri/SCo2011/Papers/CS/CS-3/azzimonti_domanin_sangalli_secchi.pdf)
- 2010** - L. Azzimonti, C. de Lalla, D. Montagna, A.M. Paganoni, L.M. Sangalli: "Mixed-effects models for growth curves: an application to the study of reconstitution kinetics of lymphocyte subpopulations", Proceedings of the 45th Scientific Meeting of the Italian Statistical Society 2010, Padova, June 16-18, 2010, <http://homes.stat.unipd.it/mgri/SIS2010/Program/contributedpaper/647-1344-1-DR.pdf>

## Speeches and presentations at conferences and workshops

- 2023** Invited keynote lecture on "Challenges and Opportunities for Artificial Intelligence in Biomedicine" at the "12a Giornata della Ricerca e dell'Innovazione in Medicina Umana della Svizzera italiana"
  - 2010-2017** 20 speeches and presentations during national and international conferences and workshops including:
    - "Structure learning from related data sets with a hierarchical Bayesian score", 10th International Conference on Probabilistic Graphical Models, 2020, Aalborg, Denmark
    - "Hierarchical Multinomial-Dirichlet model for the estimation of conditional probability tables", IEEE 17th International Conference on Data Mining (ICDM), 2017, New Orleans
    - "Spatial regression with PDE penalization", International Conference of the ERCIM WG on Computational and Methodological Statistics - invited session, London
    - "Mixed Finite Elements for spatial regression with PDE penalization", European Numerical Mathematics and Advanced Applications Conference, Lausanne, Switzerland
    - "PDE regularized blood velocity estimation", High Dimensional and Dependent Functional Data Conference, Bristol, United Kingdom
    - "PDE penalized statistical estimation of blood flow velocity profiles", 11th Conference of the Italian Society for Applied and Industrial Mathematics - invited session, Torino, Italy
    - "Non parametric estimation in nonlinear mixed-effects models for unsupervised classification", 31st Conference of Applied Statistics in Ireland, Galway, Ireland.
- Full details available under request.

## Responsibility in the research structure

- since 2023** - **Responsible** of the "AI in Health and Life Sciences" research area ([health.idsia.ch](http://health.idsia.ch)). Relation with partners, project acquisition, coordination of SUPSI researchers involved in the field.
- 2021-2022** - **Responsible** of the collaboration with Ente Ospedaliere Cantonale (EOC). Project acquisition, financial and administrative management, coordination of SUPSI researchers involved in the collaboration, supervision of sub-projects and communication responsible with partners.

- 2020-2022** - **Responsible** of the collaboration with a Swiss financial institute. Project acquisition, financial and administrative management, coordination of SUPSI researchers involved in the collaboration, supervision of sub-projects and communication responsible with partners.
- 2019-2020** - **Organizational manager** of the collaboration with a Swiss financial institute. Coordination of a group of 20 SUPSI researchers involved in the collaboration within 6 sub-projects. Supervision of the sub-projects' status and management of the sub-projects' leaders. Interface and communication responsible with partners.

## Projects

- 2023-2025** - **Co-applicant and principal investigator** of the Horizon Europe project "PRAESIDIUM: Physics informed machine learning-based prediction and reversion of impaired fasting glucose management", in collaboration with Spindox and a consortium of international hospitals and companies. SUPSI applicant within the consortium. Research in the field of physics-informed machine learning. Coordination of two post-Doc researchers and a computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- 2023-2024** - **Co-applicant and principal investigator** of the Innosuisse project "Early identification of ventilator associated pneumonia using machine learning techniques: a prospective cohort study", in collaboration with EOC. SUPSI applicant within the consortium. Research in the field of biomedical signal processing. Coordination of a post-Doc SUPSI researcher and a SUPSI computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- **Responsible for the statistical analysis** of the project "Mitrawiss", in collaboration with EOC.
- **Responsible for the statistical analysis** within the project "Colon cancer", in collaboration with San Raffaele Hospital in Milan.
- 2023** - **Direct mandate holder and principal investigator** of the project "HEAVEN: machine learning models for the identification of critical patients with high risk associated to the intubation process", in collaboration with Inselspital, Bern. Coordination of a post-Doc SUPSI researcher and a SUPSI computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- 2022-2025** - **Co-applicant and principal investigator** of the Innosuisse Flagship project "SPEARHEAD: SwissPandemic&AmR-Health Economy Awareness Detect", in collaboration with Innovation Office University Basel and a consortium of Swiss hospitals and companies. SUPSI applicant within the consortium. Research in the field of federated learning. Coordination of a post-Doc SUPSI researcher and a SUPSI computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- 2022** - **Direct mandate holder and principal investigator** of the project "CLIER - single Cell-Level Information ExtractoR' - follow up", in collaboration with EOC. Coordination of a post-Doc SUPSI researcher and a SUPSI computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- **Direct mandate holder and principal investigator** of the consultancy project "Artificial intelligence for personalised medicine", in collaboration with EOC. Definition of activities, priorities, proposal writing and explorative analyses. Relation with partners and communication of results.
- **Direct mandate holder and principal investigator** of the consultancy project "Analysis of vital signs", in collaboration with EOC. Definition of activities, priorities, proposal writing and explorative analyses. Relation with partners and communication of results.
- 2021** - **Principal investigator** of the project "CLIER - single Cell-Level Information ExtractoR", in collaboration with EOC. Coordination of a post-Doc SUPSI researcher and a SUPSI computer scientist. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- **Principal investigator** of the project "Life-ON - analysis of perinatal depression", in collaboration with EOC. Coordination of a post-Doc SUPSI researcher. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.
- **Responsible for the statistical analysis** within the project "Tumour growth" in collaboration with San Raffaele Hospital in Milan.
- **Responsible for the statistical analysis** within the project "Anesthes-AI - Papaya" in collaboration with Inselspital, Bern.

2020-2021	<ul style="list-style-type: none"> <li>- <b>Direct mandate holder and principal investigator</b> of the project “Quality of client interactions through NLP”, in collaboration with UBS. Definition of work plan, project requirements and budget.</li> <li>- <b>Principal investigator</b> of the project “SpineReg”, in collaboration with Galeazzi Hospital in Milan. Definition of work plan, project requirements and budget. Coordination of a post-Doc SUPSI researcher and a SUPSI master student. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.</li> <li>- <b>Direct mandate holder and principal investigator</b> of the project “Task agnostic Client representation from static and sequential features”, in collaboration with UBS. Definition of work plan, project requirements and budget.</li> </ul>
2019-2020	<ul style="list-style-type: none"> <li>- <b>Direct mandate holder and principal investigator</b> of the project “Client Risk”, in collaboration with UBS. Definition of work plan, project requirements and budget. Coordination of a post-Doc SUPSI researcher, a SUPSI computer scientist and a UBS co-leader. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.</li> </ul>
2018-2019	<ul style="list-style-type: none"> <li>- <b>Direct mandate holder and principal investigator</b> of the project “Churn analysis”, in collaboration with UBS. Definition of work plan, project requirements and budget. Coordination of a post-Doc SUPSI researcher and two SUPSI computer scientists. Definition of activities, priorities and resources allocation. Relation with partners and communication of results.</li> </ul>
2018	<ul style="list-style-type: none"> <li>- <b>Applicant and co-investigator</b> of the project “ALBIS: A new integrated system for risk-based surveillance of invasive mosquito <i>Aedes albopictus</i> in Switzerland”, funded by SUPSI. Coordination of two SUPSI computer scientists.</li> </ul>
2016-2018	<ul style="list-style-type: none"> <li>- <b>Co-investigator</b> of the project “Statistical learning and inference on big data with probabilistic graphical models”, funded by SNSF - Swiss National Science Foundation. Research in the field of Bayesian networks and Bayesian hierarchical models. Development and software implementation of approximate inference methods. Communication of scientific results by writing journal papers and participating to international conferences.</li> </ul>
2016	<ul style="list-style-type: none"> <li>- <b>Principal investigator</b> of the project “Analytics”, in collaboration with EOC. Definition of work plan and coordination of a SUPSI computer scientist.</li> <li>- <b>Principal investigator</b> of the project “Data mining for public statistics”, in collaboration with Ustat, Statistical office of Canton Ticino. Definition of work plan and coordination of a PhD student.</li> </ul>
2015	<ul style="list-style-type: none"> <li>- <b>Principal investigator</b> of the project “Support for the master plan development”, in collaboration with EOC. Definition of work plan and coordination of a SUPSI computer scientist.</li> <li>- <b>Principal investigator</b> of the project “Climate change impact on debris flow hazard in Ticino region”, in collaboration with IFEC ingegneria SA.</li> </ul>
2014	<ul style="list-style-type: none"> <li>- <b>Responsible for the statistical analysis</b> within the project “Study of Chronic Lymphocytic Leukemia” in collaboration with DIBIT - San Raffaele Hospital in Milan.</li> <li>- <b>Principal investigator</b> of the projects “Workforce management optimization for car parking companies”, “Customer intelligence for automotive companies” and “Mathematical models for food safety”. Definition of work plans, project requirements and budget. Coordination of 2 software programmers.</li> </ul>
2013	<ul style="list-style-type: none"> <li>- <b>Co-responsible for the organization</b> of the BarCamp “Technology foresight and statistics for the future” during Sco 2013 conference at Politecnico di Milano.</li> </ul>
2011 - 2013	<ul style="list-style-type: none"> <li>- <b>Co-investigator</b> of the FIRB “Futuro in Ricerca” project “<b>Advanced statistical and numerical methods for the analysis of high dimensional functional data in life sciences and engineering</b>”, funded by MIUR Ministero dell’Istruzione dell’Università e della Ricerca and co-investigator of the PRIN project “Advanced numerical methods and applications for scientific computing”, funded by MIUR Ministero Italiano dell’Istruzione dell’Università e della Ricerca.</li> </ul>
2008 - 2013	<ul style="list-style-type: none"> <li>- <b>Co-responsible for the statistical analysis</b> within the projects: “MACAREN@MOX” (Mathematics for Catorid Endarterectomy) in collaboration with U.O. di Chirurgia Vascolare Fondazione I.R.C.C.S. Ca’ Granda Ospedale Maggiore Policlinico, Milano and Dip. di Scienze Chirurgiche Specialistiche, Università di Milano, “iNKT cell reconstitution” in collaboration with DIBIT - San Raffaele Hospital in Milan, “Cytotoxic treatment for rectal cancer” in collaboration with San Raffaele Hospital in Milan and “Equine growth Hormone” in collaboration with the Veterinary Medicine Dep. - Università degli Studi di Milano.</li> </ul>

## Other academic activities

Tutoring for thesis	<ul style="list-style-type: none"> <li>- <b>Bachelor's Degree</b> in Computer Science Engineering, SUPSI, "Software development for hierarchical Bayesian networks learning", December, 2020.</li> <li>- <b>Bachelor's Degree</b> in Computer Science Engineering, SUPSI, "Bayesian neural networks", September, 2019.</li> <li>- <b>Master's Degree</b> in Mathematical Engineering, Politecnico di Milano, "Analysis of Doppler blood flow velocity in carotid arteries for the detection of atherosclerotic plaques", October, 2011.</li> <li>- <b>Bachelor's Degree</b> in Mathematical Engineering, Politecnico di Milano, "Metodi numerici per stime di massima verosimiglianza" ("Numerical methods for maximum likelihood estimates"), December, 2012.</li> </ul>
Tutoring for projects	<ul style="list-style-type: none"> <li>- <b>Internship</b> for Mathematical Engineering, EPFL, "Relaxing hierarchical Bayesian networks", 2021.</li> <li>- <b>Internship</b> for Mathematical Engineering, EPFL, "Mixed effects Bayesian networks", 2021.</li> <li>- <b>Master project</b> for MSE Intelligent Systems, SUPSI, "Analysis of the SpineReg dataset", 2020.</li> <li>- <b>Master project</b> for MSE Intelligent Systems, SUPSI, "Integration of weather forecast data for predicting invasive mosquito presence", 2019.</li> <li>- <b>Master project</b> for MSE Intelligent Systems, SUPSI, "Hierarchical Bayesian Networks", October, 2018.</li> </ul>
Membership	<ul style="list-style-type: none"> <li>- <b>Member of the board</b> for the "Bachelor in Data Science and Artificial Intelligence", since 2021.</li> <li>- <b>Member of the evaluation committee</b> for a PhD thesis in Information technology at Politecnico di Milano, 2024.</li> <li>- <b>Member of the program committee</b> for the workshop "PharML" at ECML PKDD conference, 2021.</li> </ul>
Social activities	<ul style="list-style-type: none"> <li>- Participation to events dedicated to promotion of science for women as SUPSI delegate, "L'ora del te", Bellinzona, November, 2018.</li> </ul>

## Awards and grants

**Best Graduate Student Prize** of the Academic year 2008-2009 for the Master Degree in Mathematical Engineering at Politecnico di Milano, Italy, April 20, 2011.

**Best Graduate Student Prize** of the Academic year 2006-2007 for the Bachelor's Degree in Mathematical Engineering at Politecnico di Milano, Italy, March 12, 2009.

**Grant for early career researchers** for the attendance of the school "Statistical Modeling for Biological and Environmental Systems" in Venice, Italy, funded by CRISM - Statistical Department of the University of Warwick September 12-16, 2011.

## Language skills

Mother tongue(s)

Self-assessment

European level

**English**

**French**

**German**

Certificates

**Italian**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user	C2	Proficient user
B2	Independent user	B2	Independent user	B2	Independent user	B2	Independent user	B1	Independent user
A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user

English: TOEFL (240/300)

## Computer and programming skills

Extensive knowledge of R (statistical data analysis), Matlab, Octave (mathematical programming) and FreeFem++ (Finite Element programming language). Good C++, Python, stan and Latex programming skills. Extensive knowledge of Finite Element programming and good knowledge of parallel computing. Proficient user of Mac OSX and Windows XP, Vista, 7. Good knowledge of command-line Unix. Proficient user of the Microsoft Office suite of programs. Basic knowledge of WinBUGS, HTML, SQL.



## **Management skills**

Project management, team building, communication, customer orientation, relationship management.

For further information visit the website <http://people.idsia.ch/~laura.azzimonti/>