Annalisa Barla

Associate professor

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Education and training

2005
PhD in Computer Science
A general framework for Image Kernel Engineering
Università di Genova - Genova - IT

2001
MSc in Physics
Rappresentazione dati nella teoria statistica dellapprendimento (Data representation in statistical learning theory)
Università di Genova - Genova - IT

Academic experience

2017 - ONGOING
Associate Professor in Computer Science
Università di Genova - Genova - IT

2012 - 2017
Assistant Professor in Computer Science
Università di Genova - Genova - IT

2008 - 2011
Research Fellow (Assegnista di Ricerca)
Università di Genova - Genova - IT

2006 - 2007
Research Fellow
ITC-IRST (now Fondazione Bruno Kessler) - Trento - IT

2005
Intern
Siemens Corporate Research - Princeton NJ - US

Teaching activity

My teaching activity revolves mainly about the topics of my research:

- *digital signal and image processing* for computer scientists
- *bioinformatics and computational biology* for computer scientists

- *introduction to machine learning* for medical students
- *introduction to data science and visualization* for designers

Postgraduate research and teaching activity

Supervision of PhD students, residents and post-doctoral fellows

As a PhD supervisor, I worked with:

- Margherita Squillario
- Samuele Fiorini
- Chiara Martini
- Federico Tomasi
- Vanessa D'Amario
- Veronica Tozzo
- Davide Garbarino

PhD committees membership

- Medicina Translazionale in Oncologia ed Ematologia (2013-2016, ongoing)
- Computer Science and Systems Engineering (2017-2018)

Research interests

My main areas of interest are in the field of data science. In particular:

- methods of analysis and representation of graphs (network science) for the understanding and structuring of large amounts of textual and multimedia data for the web
- visualization techniques for structured and complex data
- machine learning methods for variable selection based on sparse regularization techniques
- experimental design of data analysis using reproducible and statistically robust techniques, especially in the case of few samples and many variables

I have been PI or unit manager of several funded projects in the field of basic or applied research:

- Deconstruct and rebuild phenotypes: a multimodal approach toward personalized medicine in ALS (DECIPHER-ALS).
  MIUR ¦ PRIN 2019-2021- 85keur
- UniGe Web - Data driven web redesign (co-Principal Investigator).
  UniGe 2017-2022 - 550keur
- Advancing non-invasive procedures for the support of early diagnosis of partial epilepsies. Compagnia di Sanpaolo 2018-2020 167k
  Early DETECTion of Multiple Sclerosis progression driven by clinical

scales and Patient Reported Outcome.
FISM - Italian Foundation Multiple Sclerosis 2017-2019 110keur

- ML & Neuroscience.
  UniGe ¦ DIBRIS SEED 2017-2019 15keur
- CARIGE Research fellowships: Frailty in elderly.
  Fondazione CARIGE 2017 - 25keur
- Applications of advanced genome sequencing techniques: From research to clinical practice.
  Fondazione CARIGE 2012-2013 - 100keur

Numerous students that I supervised as scientific advisor have successfully pursued a career as data and computer scientists in Italy or abroad (Harvard, MIT, Spotify, Platomics).
I am co-author of more than 70 papers on journals and conferences. A list of my publications can be found
on my Google Scholar profile at https://bit.ly/2TIEhQc

Grants

2018 - ONGOING

DECIPHER-ALS - Bando PRIN 2017 grant (2017SNW5MB)

Ministero Università e Ricerca - IT
180Keur - Participant

2018 - 2021

Advancing non-invasive procedures for the support of early diagnosis of partial epilepsies

Compagnia di Sanpaolo - IT
170Keur - Pricipal investigator

2016 - 2021

Early DETECTion of Multiple Sclerosis progression driven by clinical scales and Patient Reported Outcome (DETECT-MS PRO)

FISM - Fondazione Italiana Sclerosi Multipla - IT
110Keur - Pricipal investigator

2015

Detection of High Frequency Oscillations in Stereo-Electroencephalography with Sparse and Adaptive Dictionary Learning

Universita' di Genova - Fondi di ricerca di ateneo - IT
15keur - Pricipal investigator

2012 - 2013

Applicazioni di tecniche avanzate di sequenziamento del genoma (Next Generation Sequencing NGS) dalla ricerca

alla pratica clinica
CARIGE - IT
100Keur - Pricipal investigator

2012
Modelli e metodi computazionali per grandi quantità di dati
Universita' di Genova - Fondi di ricerca di ateneo - IT
14keur - Pricipal investigator

Editorial activity

- Expert project reviewer
  Research Executive Agency - EU H2020-MSCA-ITN-2017 (H2020 Marie Sklodowska-Curie
  Actions)
- Scientific Advisory Board
  EU H2020 - Personalised Medicine Trials (PERMIT)
- Program Committee Member
  SCIPY 2017 - Scientific Computing with Python, AISTATS 2017 - The 20th International Conference on Artificial Intelligence and Statistics, ICHI 2014 - IEEE International Conference on Healthcare Informatics 2014 (ICHI 2014) – Verona, Italy, IJCAI-13 - 23rd International Joint Conference on Artificial Intelligence - Beijing, China, IDAMAP 2012 - Intelligent Data Analysis in bioMedicine and Pharmacology - Pavia, Italy
- Reviewer
  - Conferences
  AISTATS 2018 (20th International Conference on Artificial Intelligence, NIPS - 2017 (Neural Information Processing Systems), CIBB - 2017 (Computational Intelligence methods for
  Bioinformatics and Biostatistics), AAAI-17 (Thirty-First AAAI Conference on Artificial Intelligence), AISTATS 2017 (20th International Conference on Artificial Intelligence and Statistics), NIPS - 2016 (Neural Information Processing Systems), ESANN - 2014 (European Symposium on Artificial Neural
  Networks), SciPy 2017 (Scientific Computing with Python)

  - Journals
  Bioinformatics, Plos One, BMC Genomics, Briefings in Bioinformatics, Pattern Recognition, Machine Learning, Neural Computation, Pattern Recognition, Neural Computation,
  Neurobiology of Aging, 'Bringing Maths to Life' (Springer Ed.), Inverse Problems in Science and Engineering, Statistical Applications in Genetics and Molecular Biology.

Other professional activities

From May 2018 to May 2021, I was the Data Protection Officer for Università di Genova.