Mattia Ciollaro

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Department of Statistics
132 Baker Hall
Carnegie Mellon University
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EDUCATION

Ph.D. Student in Statistics — Aug. 2012 - present
Department of Statistics
Carnegie Mellon University
Pittsburgh, PA, USA

Master of Science in Statistics — Aug. 2012 - May 2013
Department of Statistics
Carnegie Mellon University
Pittsburgh, PA, USA

Master of Arts with distinction in Statistics and Applied Mathematics — Sep. 2010 - Jul. 2012
Senior Allievi Program (Honors)
Collegio Carlo Alberto
Moncalieri, Italy

Laurea Magistrale (MA equivalent) summa cum laude in Statistical Science — Sep. 2010 - Jul. 2012
Università degli Studi di Torino
Torino, Italy
Thesis Title: *Recent Developments on Confidence Distributions*
Supervisors: Prof. Pierpaolo De Blasi, Prof. Cinzia Carota

Allievo Junior Diploma in Statistics and Applied Mathematics — Sep. 2009 - Aug. 2010
Junior Allievi Program (Honors)
Collegio Carlo Alberto
Moncalieri, Italy

Laurea Triennale (BA equivalent) cum laude in Statistical Science — Sep. 2007 - Aug. 2010
Università degli Studi di Torino
Torino, Italy
Thesis Title: *Efficient Drawing Methods and Simulation-Assisted Estimation of Mixed Discrete Choice Models*
Supervisor: Prof. Roberto Leombruni

PAPERS

- **In preparation**
  1. M. Ciollaro, C. R. Genovese, D. Wang. Nonparametric clustering of functional data using pseudo-densities.

- **Peer-reviewed journal papers**

  1. M. Ciollaro, C. R. Genovese, J. Lei, L. Wasserman. The functional mean-shift algorithm for mode hunting and clustering in infinite dimensions. Submitted. [arXiv]
  2. M. Ciollaro, J. Cisewski, P. E. Freeman, C. R. Genovese, J. Lei, R. O'Connell, L. Wasserman. Functional regression for quasar spectra. Submitted. [arXiv]
  3. L. E. Fisher, C. A. Ayers, M. Ciollaro, V. Ventura, R. A. Gaunt, D. J. Weber (2014). Chronic recruitment of primary afferent neurons by microstimulation in the feline dorsal root ganglia. *Journal of Neural Engineering.* [link]

- **Book chapters**

  1. M. Ciollaro, J. Cisewski, P. E. Freeman, C. R. Genovese, R. O'Connell, L. Wasserman (2014). Nonparametric functional prediction of the unabsorbed flux continuum in the Lyman alpha forest of quasar spectra. *Contributions in infinite-dimensional statistics and related topics*, Società Editrice Esculapio. [link]

CONFERENCES

- **Invited talks**

  – 2nd International Society of NonParametric Statistics Conference (ISNPS 2014), Cádiz (Spain), June 12th-16th, 2014 - 'Nonparametric Functional Data Analysis' session
  Title of the talk: *Nonparametric functional prediction of the Lyman-α forest unabsorbed flux continuum of quasar spectra*

  – Eighth International Workshop on Simulation (IWS 2015), Vienna (Austria), September 21st-25th, 2014 - 'Contribution to Functional Data Analysis' session
  Title of the talk: *An inferential theory of clustering for functional data*

  – Eighth International Conference of the ERCIM Working Group on Computational and Methodological Statistics (CMStatistics 2015), London (UK), December 12th-14h, 2015 - 'Non and semi-parametric approaches in functional statistics' session
  Title of the talk: *An inferential theory of clustering for functional data*

- **Contributed talks**

  – Third International Workshop in Functional and Operatorial Statistics (IWFOS 2014), Stresa (Italy), June 19th-21st, 2014
  Title of the talk: *Nonparametric functional prediction of the Lyman-α forest unabsorbed flux continuum of quasar spectra*

- **Other**

  – SIAM Student Chapter, Carnegie Mellon University, Department of Mathematical Sciences, March 6th, 2014
  Title of the talk: *Nonparametric functional regression and mode hunting in function spaces*

TEACHING EXPERIENCE

Instructor

- Carnegie Mellon University
  - 94-842 Programming in R for Analytics — Sep. 2015 - Oct. 2015
  - 94-842 Programming in R for Analytics (live streaming for the CMU Adelaide campus, Australia) — Sep. 2015 - Oct. 2015
  - 36-217 Probability Theory and Random Processes — May. 2015 - Jun. 2015

    "Mattia works really hard to make this class amazing. One of the best teachers I have had, whether student or professor."
    "Good course, good prof teaching it, enjoyed it."
    "I could tell a lot of effort and dedication was put into the teaching. Thank you very much! It also encouraged the learning process. The notes are very good and I enjoyed what I learned from the class."
    "Nice teaching! I think you really got me interested in the subject matter. Thanks for everything!"

Teaching Assistant

- Carnegie Mellon University
  - 36-755 Advanced Statistical Theory (graduate course) — Sep. 2015 - Dec. 2015
  - 10/36-725 Convex Optimization (graduate course) — Jan. 2015 - May 2015

    "You can immediately tell Mattia genuinely cares whether his students learn. He follows up with additional emails, asks to meet outside his normal office hours, and is honest about what he knows and doesn't know. My favorite TA from convex opt."

  - 36-225 Introduction to Probability Theory — Sep. 2014 - Dec. 2014

    "Very committed to students and class."
    "Mattia was a perfect TA!"
    "He is super good"

  - 36-309 Experimental Design for Behavioral and Social Sciences — Jul. 2014 - Aug. 2014
  - 36-410 Introduction to Probability Modeling — Jan. 2014 - May 2014
  - 36-225 Introduction to Probability Theory — Sep. 2013 - Dec. 2013
  - 36-217 Probability Theory and Random Processes — Jan. 2013 - May 2013
  - 36-225 Introduction to Probability Theory — Sep. 2012 - Dec. 2012
- Unicredit Bank (Torino, Italy)
  - Corporate Finance — July 2011

SCHOLARSHIPS

Allievi Program Scholarship — Sep. 2009 - Jul. 2012
Collegio Carlo Alberto
Description: full reimbursement of the tuition fees at Università degli Studi di Torino.

AWARDS

Premio Optime - Unione Industriale Torino 2013
Description: Università deli Studi di Torino outstanding student award.

EDITORIAL ACTIVITY

Reviewer for: *Biometrika*, *Computational Statistics and Data Analysis*

MEMBERSHIPS

- ASA - American Statistical Association (Student Membership), IMS - Institute of Mathematical Statistics (Student Membership), SIAM - Society for Industrial and Applied Mathematics (Student Membership), CMStatistics/CFEnetwork (Standard Membership)
- Collegio Carlo Alberto Alumni Association (Co-Founder)

SUMMER SCHOOLS AND INTERNSHIPS

ABS Summer School on Applied Bayesian Statistics June 2011
EURAC, Bozen, Italy
Topic: Hierarchical Modeling for Environmental Processes
Lecturer: Prof. Alan Gelfand

BiostatEpi Summer School on Modern Methods in Biostatistics and Epidemiology June 2011
Antico Borgo di Tabiano Castello, Parma, Italy
Courses:

- Survival Analysis (Prof. Paul Dickman)
- Causal Inference (Prof. Andrea Rotnitzky)
- Applied Longitudinal Analysis (Prof. Garrett Fitzmaurice)
- Biostatistics 2 (Prof. Marco Bonetti)

SMI Summer School on Mathematics Aug. 2010 - Sep. 2010
Università degli Studi di Perugia, Perugia, Italy
Courses:

- Probability (Prof. David Gilat)
- Mathematical Statistics (Prof. Yosef Rinott)

Internship at Laboratorio Riccardo Revelli Mar. 2010 - Jul. 2010
Collegio Carlo Alberto
Moncalieri, Italy
Description: work for bachelor thesis on basic economic microsimulation models using the software *Modgen* (Statistics Canada)
Supervisor: Prof. Roberto Leombruni

COURSES TAKEN DURING PHD

- Fall 2012
  - 36-705 Intermediate Statistics
  - 36-707 Regression Analysis
  - 36-725 Optimization (audit)
  - 36-728 Time Series
  - 36-730 Graphical Models with R
- Spring 2013
  - 36-702 Statistical Machine Learning
  - 36-752 Advanced Probability Overview
  - 36-757 Advanced Data Analysis 1
  - 36-786 Bayesian Theoretical Statistics 1 (audit)
  - 36-787 Bayesian Theoretical Statistics 2 (audit)
- Fall 2013
  - 36-725 Convex Optimization
  - 36-755 Advanced Statistical Theory
  - 36-757 Advanced Data Analysis 2
- Fall 2014
  - 36-825 Statistics Journal Club
- Spring 2015
  - 36-704 Information Theory and Learning (audit)

PROGRAMMING SKILLS

- C and C++: basic.
- Hadoop: basic.
- LaTeX: advanced.
- Microsoft Office and OpenOffice: advanced.
- Python: basic.
- R and R Studio: advanced.
  - `ggplot2` and `lattice`: basic.
  - plotly: basic.
  - `googleVis`: basic.
  - `rCharts`: basic.
  - R Markdown: advanced.
  - Shiny: basic.
- SAS: basic.
- SPSS: intermediate.
- STATA: basic.

CERTIFICATIONS

Obtained certificates for the completion of the following classes on Coursera:

- *Introduction to Big Data* by University of California, San Diego on Coursera.
  Certificate earned on September 19th, 2015.
- *Programming for Everybody (Getting Started with Python)* by University of Michigan on Coursera.
  Certificate earned on September 18th, 2015.
- *Python Data Structures* by University of Michigan on Coursera.
  Certificate earned on September 20th, 2015.
- *Using Python to Access Web Data* by University of Michigan on Coursera.
  Certificate earned on October 31st, 2015.
- *Developing Data Products* by Johns Hopkins University on Coursera
  Certificate earned on October 31st, 2015.

Currently taking the following classes on Coursera:

- *Hadoop Platform and Application Framework* by University of California, San Diego.
- *Practicatl Machine Learning* by Johns Hopkins University.