Virginia **Aglietti**

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Programming
Python (Tensorflow) - Advanced
R - Advanced
Matlab - Intermediate
C++/C - Basic

Languages
Italian - Native
English - Full professional proficiency
French - Working proficiency
Spanish - Limited working proficiency

Skill
Perseverance, teamwork, adaptability

Hobbies
Salsa dancing
Cooking
Photography

Research Interests

My research interests are at the interface of Bayesian statistics and computer science. I work on **machine learning**, developing **scalable algorithms** for **multi-task learning** with Gaussian processes. I am interested in linking probabilistic models and real world **causal decision making problems** with the aim of developing probabilistic frameworks for analyzing and assessing the impact of policies.

Education

09/16 – 09/20 **PhD, Statistical Science** University of Oxford/University of Warwick, UK
Oxford-Warwick Statistics Programme (OxWaSP)
PhD topic: Spatio-Temporal Multi-Task Learning of Non-Stationary Point Processes.
PhD Supervisors: Dr Theo Damoulas, Prof. David Firth.

09/12 – 04/15 **MSc. in Economic and Social Sciences** Bocconi University, Italy
Degree classification: 110/110 Summa cum laude.
Dissertation topic: Web-based nowcasting of official statistics: variable selection with high dimensional time series. Supervised by Professor Sonia Petrone.

Publications

12/20 **NeurIPS 2020 - Multi-task Causal Learning with Gaussian Processes**
V. Aglietti, T. Damoulas, M. A. Álvarez, J. González
In this paper we study the problem of learning the correlation structure of a set of intervention functions defined on a causal graph. This is useful when we are interested in jointly learning the causal effects of multiple interventions exploiting all available sources of information.

06/20 **AISTATS 2020 - Causal Bayesian Optimization**
V. Aglietti, X. Lu, J. González
In this paper we study the problem of globally optimizing a variable of interest that is part of a causal model. We combine ideas from causal inference, uncertainty quantification and sequential decision making.

12/19 **NeurIPS 2019 - Structured Variational Inference in Continuous Cox Process Models**
V. Aglietti, E. Bonilla, T. Damoulas, S. Cripps
In this paper we propose a scalable framework for structured variational inference in inhomogeneous Poisson process models. We present a tractable representation of the likelihood through augmentation with a superposition of Poisson processes.

04/19 **AISTATS 2019 - Efficient Inference in Multi-task Cox Process Models**
V. Aglietti, T. Damoulas, E. Bonilla
In this paper we generalize the LGCP framework to model multiple correlated point data jointly and we develop an efficient variational inference framework that is order of magnitude faster then competing approaches.

Work Experience

07/20 – 12/20 **Researcher Intern, Microsoft Research Cambridge** Cambridge, UK
Work on non myopic decision making algorithm in the context of personalized education.

07/19 – 11/19 **Applied Scientist Intern, Amazon Cambridge** Cambridge, UK
Work on integrating casual inference into decision-making algorithms. Development of a Python toolkit for probabilistic causal decision making under uncertainty.

11/18 – 02/19 **Visiting Researcher, Data61 (CSIRO) - CTDS University of Sydney** Sydney, Australia
1st project: Development of multi-task continuous models for Gaussian processes modulated non-homogeneous Poisson processes. 2nd project: Development of scalable MCMC algorithm for Gaussian processes models.

03/16 – 06/16 **Research Analyst, Universita' Cattolica** Transcrime, Italy
Statistical analysis of the main drivers of the illicit cigarette trade in Europe.

09/15 – 03/16 **Research Analyst, Bank of Italy** Bank of Italy, Italy
Statistical analysis of internationalization and diversification strategies.

06/15 – 08/15 **Research Intern, International Labour Organization** ILO, Switzerland
Integration of Twitter Data and Google Data into forecasting models for official statistics.

02/14 – 06/14 **Research Intern, UN Economic and Social Commission for Asia and the Pacific** ESCAP, Thailand
Research on GDP forecasting methods used by the member states.

Fellowship & Awards

08/18 – 09/20 **Visiting Researcher Fellowship at the Alan Turing Institute** London, UK
Affiliation with the UK's National Institute for Data Science & AI.

09/16 – 09/20 **EPSRC OxWaSP Fellowship** UK
Award covering the tuition fees, maintenance (14,254 GBP p.a.) and stipend (1000 GBP p.a.).

09/16 – 09-17 **Giorgio Mortara Fellowship** Rome, Italy
Financial supports for graduates students in mathematics, statistics and econometrics. 24,000 EUR p.a.

PhD-level Coursework

09/16 – 06/17 **OxWaSP Modules**
Machine Learning: Determine Online Prototypes and Criticism.
Computational Statistics: Adaptive MCMC.
Probability and Approximation: Poisson Approximation and the Chen-Stein Method.
Stochastic Simulation: Particle MCMC.
Scalable Methods & Analysis of Large Complex Data: Consensus MCMC.
Bayesian Inference: Approximate Bayesian Computation.
Applied Statistics: The impact of preterm birth and small gestational age on cognitive and motor abilities.
Time series and Stochastic Processes: The Variance Gamma process for modelling asset prices.