Personal information

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Bayesian Inference Engineer

General description

PhD in computer science and **MSc in social anthropology**, I am a **Bayesian Inference Engineer** working on machine learning, software development and causal reasoning.

In contrast to ad-hoc solutions, the strict application of probability theory (Bayesian approach) guarantees inter-subjective agreements in contexts of uncertainty, the foundation of empirical truths. Although it is known to be the correct logic for the empirical sciences, its adoption was historically limited due to its high computational cost. Instead of selecting a single hypothesis, the Bayesian approach evaluates each and every hypotheses according to the empirical and formal evidence (data and causal models). In last decades these obstacles have been largely overcome thanks to the development of efficient approximation methods and distributed inference algorithms. It is the correct use of these tools that always guarantees risk reduction and optimal decision making. The state-of-the-art skill estimator for the video game industry, which I have published in `Python`, `Julia` and `R`, is just one example.

Work experience

2022 / 08 – In progress

Director – Laboratorio de Métodos Bayesianos

The Laboratory works on the technical, practical and theoretical aspects of the Bayesian approach to probability theory, developing methods to optimally solve empirical problems in industry, politics and ecology: actuarial (and betting) solutions, creation and maintenance of databases, evaluation of causal models, efficient inference methods, optimal decision making in contexts of uncertainty.

2016 / 02 – In progress

Graduate teaching assistance in Computer Science – Facultad de Ciencias Exactas y Naturales - UBA

Current positions: Master's thesis director in Computer Science and Seminar on Bayesian Inference. (See reverse side).
Tools: Data structures. `C++`. Algorithms. `Python`. Functional programming. `Haskell`. Software specification.

2016 / 06 – 2022 / 06

Doctoral Fellowship in Computer Science – Instituto de Ciencias de la Computación CONICET

Artificial Intelligence Lab. High Performance Computing Lab.

Release of the first open version of the state-of-the-art skill estimator, TrueSkill Through Time (TTT), creating the first packages available so far in `Julia`, `Python` and `R`. Unlike the models commonly used in the video game industry and academia, TTT propagates historical information throughout the entire causal network, providing estimates with low uncertainty at any given time, enabling reliable initial skill estimates, and ensuring historical comparability. Analytical approximation methods and message-passing algorithms allow inference to be solved efficiently using any low-end computer, even in causal networks with millions of nodes and irregular structures.

2015 / 07 – 2016 / 03

Coordinator of the areas of Public Opinion and Informatics – UNSAM-PASCAL

Within the PASCAL Programme, the body of the National Audiovisual Audience Measurement System responsible for the Buenos Aires Metropolitan Area, I was in charge of the administration of the database and the automatic survey system, coordinating the tasks of the Public Opinion and Informatics staff (social scientists and computer technicians). Tools: Database administrator. `SQL`. Measurement of social media. Survey design. Data analysis. `R`.

2014 / 01 – 2015 / 06

Data Engineer – High Performance Computer Lab. UBA.

Distributed computing. Parallel Programming. `MPI`. Shell script. Distributed Database.

2012 / 08 – 2013 / 05

Public policy evaluation – Ministerio de Desarrollo Social, Argentina

Ethnography. Social work. Impact evaluation. Community policies.

2008 / 08 – 2016 / 06

Data Scientist – Freelance at Grupo Antropocaos

Predictive models. Online betting. Optimal decision making. Database creation. Web scraper.

Software

The state-of-the-art skill model.

Article

Landfried G., Mocskos E. *TrueSkill Through Time: reliable initial skill estimates and historical comparability in Julia, Python and R*. In review at Journal of Statistical Software. Github 2021. Download

Code

`github.com/glandfried/TrueSkillThroughTime` (`Julia`, `Python` and `R`)

Education

2016 / 06 – 2022 / 06 PhD in **Computer Science**, Buenos Aires University

2012 / 08 – 2015 / 12 Licentiate in Computer Science, Buenos Aires University (Suspended after promotion to PhD)

2005 / 03 – 2009 / 12 Licentiate (BSc + MSc) in **Anthropological Sciences**, Buenos Aires University.

Teaching

University of Buenos Aires

2020 / 02 – In progress *Bayesian Inference* (with `Julia`, `Python` and `R`). Faculty of Exact and Natural Sciences.

2019 / 08 – In progress *One-on-one mentoring.* Director of master's thesis in the Department of Computer Science.

2019 / 02 – 2019 / 08 *Algorithms and data structures I* (with `C++`). Department of Computer Science.

2018 / 08 – 2019 / 08 *Introduction to Computer Science* (with `Python`). Department of Computer Science.

2018 / 08 – 2018 / 12 *Computational Social Science* (with `R`). Departments of Anthropology and Computer Science.

2016 / 02 – 2017 / 08 *Functional programming* (with `Haskell`). Department of Computer Science.

2010 / 02 – 2010 / 07 *Artificial Societies and Ethnography* (with `Netlogo`). Department of Anthropological Sciences.

Scientific events

→ **Poster** Computer Science Research Day. Université de Buenos Aires, Argentine. 2022

Poster 3rd ESLR. Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany. 2019

Poster Machine Learning Summer School, MLSS. Torcuato Di Tella University, Argentina. 2018

Languages

Spanish	French	English
Native	C1	C1