Pierre Mahé

Research Engineer - Machine Learning for Computational Biology

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https://pmahe.github.io
Married, 3 children

Education

2003–2006 **Ecole des Mines de Paris (France)**, *Ph.D.*, Machine Learning and Computational Biology.
Graph kernel and kernel methods for chemoinformatics. Supervised by Jean-Philippe Vert, obtained with honors.

2002–2003 **Ecole Normale Supérieure de Cachan (France)**, *M.Sc.*, Machine Learning and Computer Vision.
Obtained with honors.

1997–2002 **Institut National des Sciences Appliquées (France)**, *French Engineering Degree.*, Computer science

Experience

2016–present **Associate Professor (part-time)**, *University Grenoble-Alpes (France)*
Teaching statistical machine learning, computational statistics and project management to masters's students.

2008–present **Research Engineer**, *bioMérieux (Grenoble, France)*
Machine learning expertise to support R&D projects adressing key *in vitro* diagnostics issues for clinical microbiology, using emerging technologies (e.g., NGS, imaging and mass-spectrometry). Mentoring of students and junior employees. Definition, planning and management of R&D projects.

2006–2008 **Post-Doctoral Researcher**, *Xerox Research Center Europe (now Naver Labs, Grenoble, France)*
Statistical Learning for machine translation.

Students supervision

2021 **Thomas Poulain**, *M.Sc*, .

2021 **Lina Khodja**, *M.Sc*, .

2020–present **Teddy Ardouin**, *Ph.D*, Automatic design of PCR primers using deep-generative models.
Co-advised with Adeline Leclerq-Samson (University Grenoble-Alpes) and Laurent Drazek (bioMérieux).

2019 **Sylla Camara**, *M.Sc*, .

2018 **Luis Montero**, *M.Sc*, classification of bacterial 16S genomic sequences by convolutional neural networks.

2017 **Julia Puig**, *M.Sc*, semantic segmentation of microscopy images by deep-learning.

2017 **Antonin Riffard**, *M.Sc*, targeted resistance genotyping for *Mycobacterium tuberculosis*.

2015 **Antoine Bonnefoy**, *Ph.D (visiting)*, sparse multi-task learning for antimicrobial resistance.

2011-2014 **Kévin Vervier**, *Ph.D*, structured machine learning methods for clinical microbiology.
Co-advised with Jean-Philippe Vert (Ecole des Mines de Paris, now Google Brain).

Selected publications

2020 *Interpreting k-mer based signatures for antiobiotic resistance prediction.* Magali Jaillard-Dancette, Mattia Palmieri, Alex van Belkum, Pierre Mahé. GigaScience.

2019 *A large scale evaluation of TBProfiler and Mykrobe for antibiotic resistance prediction in M. tuberculosis.* Pierre Mahé, Meriem El Azami, Philippine Barlas, Maud Tournoud. PeerJ.

2018 *Predicting bacterial resistance phenotypes from whole-genome sequences using k-mers and stability selection.* Pierre Mahé, Maud Tournoud. BMC Bioinformatics.

2016 *Large Scale Machine Learning for Metagenomics Sequence Classification.* Kévin Vervier, Pierre Mahé, Maud Tournoud, Jean-Baptiste Veyrieras, Jean-Philippe Vert. Bioinformatics.

2016 *Joint input/output regularization for structured variable selection in a multi-task framework.* Antoine Bonnefoy, Pierre Mahé, Ismael Ouamlil, Jean-Baptiste Veyrieras. Conférence Française d'Apprentissage.

2014 *Automatic identification of mixed bacterial species fingerprints in a MALDI-TOF mass-spectrum.* Pierre Mahé et. al. Bioinformatics.

2009 *Linguistically enriched word-sequence kernels for discriminative language modeling.* Pierre Mahé, Nicola Cancedda. Learning Machine Translation, MIT Press.

2009 *Graph kernels based on tree-patterns for molecules.* Pierre Mahé, Jean-Philippe Vert. Machine Learning

2005 *Graph kernels for molecular structure-activity relationship analysis with support vector machines.* Pierre Mahé, Jean-Philippe Vert. Journal of Chemical Information and Modeling

Full list available at `https://scholar.google.fr/citations?user=3yLMPGgAAAAJ`

Skills

Data Science: R, python keras/tensorflow, git, c/c++.

Computational Biology: Next-generation sequencing, mass spectrometry, image analysis.

Languages: English (fluent) and Spanish (intermediate).

Personal interests

Rock climbing and bouldering, hiking, mountain biking.

Photography.

Graphical novels.

Struggling to learn the guitar.

Rererences

Available upn request.