Sylvain **Le Corff**
PROFESSOR

16 rue Nansouty, 75014 Paris

☐ 0160764469　|　✉ sylvain.lecorff@gmail.com　|　🏠 https://sylvainlc.github.io/　|　🎓 Scholar profile

Work Experience

Télécom SudParis, Institut Polytechnique de Paris *Palaiseau, France*
PROFESSOR *Sep. 2018 - ...*

École Polytechnique, Institut Polytechnique de Paris *Palaiseau, France*
PROFESSEUR CHARGÉ DE COURS *Sept. 2015 - ...*

Laboratoire de Mathétamtique d'Orsay, UMR8628 *Orsay, France*
CNRS ASSOCIATE SCIENTIST *Sept. 2013 - ...*
- On leave since September 2018.

University of Warwick, CRiSM *Coventry, UK*
RESEARCH FELLOW *Sept. 2012 - Sept. 2013*
- Supervised by Gareth O. Roberts and Krzysztof Latuszynski.
- Exact simulation of diffusion processes.
- Optimal scaling of Markov Chain Monte Carlo algorithms.

Laboratoire de Mathétamtique d'Orsay, UMR8628 *Orsay, France*
HABILITATION À DIRIGER DES RECHERCHES *June 2018*
- Latent data models. Nonparametric and high dimensional contributions.
- *Advisors*: Élisabeth Gassiat, Arnaud Doucet, Alexandros Beskos.
- *Committee*: Adeline Leclercq-Samson, Jean-Yves Tourneret, Jean-Michel Marin, Pierre Pudlo.

Télécom Paris, LTCI *Paris, France*
PH.D. *Sep. 2012*
- Sequential Monte Carlo methods. Application to simultaneous localization and mapping.
- Supervised by Éric Moulines and Gersende Fort.
- *Advisors*: Arnaud Doucet and Gilles Pagès.
- *Committee*: Élisabeth Gassiat, Jean-Michel Marin, Éric Moulines and Gersende Fort.

Scientific duties

2018 - 2022	**ANR program ABSINT**, member, Principal Investigator: Christian Robert	*IP Paris*
2019 - 2023	**GdR ISIS**, coordinator of the program "Simulation pour les problèmes de grande taille"	*IP Paris*
2019-...	**Statistical seminar**, co-organizer of the monthly seminar "All about that Bayes"	*Agro ParisTech*
2019	**Conference**, co-chair of the Junior Conference on Data Science and Engineering	*Centrale Supélec*
2017-2018	**Statistical seminar**, co-organizer of the weekly seminar	*IMO, Orsay*
2016-2018	**CCSU**, substitute member	*IMO, Orsay*
2014	**Workshop**, co-organizer of the workshop "Computational methods for jump processes"	*CRiSM, Warwick*

Fundings

CIRM *18 k€*
FUNDING FOR THE ORGANIZATION OF A CIRM RESEARCH SCHOOL *2021*
- End-to-end Bayesian Learning Methods.
- Co-chair with Julien Stoehr & Pierre Gloaguen.

VeePee *120 k€*
CHAIR BETWEEN VEEPEE, TÉLÉCOM AND TÉLÉCOM SUDPARIS *2019 - 2022*
- Co-chair with Pascal Bianchi.

2019 Paris Region Ph.D. *100 k€*
FUNDING PROVIDED BY THE RÉGION ÎLE DE FRANCE, WITH THE DIM MATH'INNOV *2019 - 2023*
- Funding for the Ph.D. thesis of Max Cohen.
- Metamodels and Bayesian deep learning for partially observed dynamical systems.

Oze Énergies	*30 k€*
Contract to develop models to optimize energy consumptions and confort in big buildings	*2019 - 2023*

Supervision (Ph.D. students, Postdoctoral fellows)

Max Cohen	*EDMH*
Télécom SudParis and Oze Énergies	*Feb. 2020 - ...*

- Co-supervised with Marius Preda (Télécom SudParis).
- Metamodels and Bayesian deep learning for partially observed dynamical systems.

Alice Martin	*EDMH*
École Polytechnique and Télécom SudParis	*Apr. 2019 - ...*

- Co-supervised with Olivier Pietquin (Google Brain).
- Deep reinforcement learning for natural language processing. Application to goal-oriented visual question generation.

Pierre Gloaguen	*Postdoct.*
Agro ParisTech	*March 2016 - March 2017*

- Co-supervised with Marie-Pierre Étienne (IRMAR).
- Exact sampling of stochastic differential equations with applications to movement ecology.

Publications

Journals

2020 — **Bernoulli**, ArXiv:1707.01365, *Learning the distribution of latent variables in paired comparison models*, R. Diel, S. Le Corff, and M.Lerasle

2020 — **Submitted**, ArXiv:1902.01070, *Identifiability and consistent estimation of nonparametric translation hidden Markov models with general state space*, É. Gassiat, S. Le Corff and L. Lehéricy

2019 — **Submitted**, ArXiv:1908.07254, *Online pseudo Marginal Sequential Monte Carlo smoother for general state spaces. Application to recursive maximum likelihood estimation of stochastic differential equations*, P. Gloaguen, S. Le Corff and J. Olsson

2019 — **Submitted**, ArXiv:1808.08104, *A Bayesian nonparametric approach for generalized Bradley-Terry models in random environment*, S. Le Corff, M. Lerasle, É Vernet

2018 — **EURASIP Journal on Advances in Signal Processing**, 9, *Online Sequential Monte Carlo smoother for partially observed stochastic differential equations*, P. Gloaguen, M.-P. Étienne, and S. Le Corff

2018 — **Journal of the Royal Statistical Society : Series C**, 67(3) :599–619, *Stochastic differential equation based on a multimodal potential to model movement data in ecology*, P. Gloaguen, S. Le Corff, and M.-P. Étienne

2018 — **Advances in Applied Probability**, 50(1), *On the two-filter approximations of marginal smoothing distributions in general state space models*, T.N.M. Nguyen, S. Le Corff, and É. Moulines.

2017 — **IEEE Transacions on Information Theory**, 63(8) :4758–4777, *Consistent estimation of the filtering and marginal smoothing distributions in nonparametric hidden Markov models*, Y. de Castro, É. Gassiat, and S. Le Corff

2017 — **Statistics**, 51 :61–83, *Statistical inference for oscillation processes*, R. Dalhaus, T. Dumont, S. Le Corff, and J.C. Neddermeyer

2017 — **Bernoulli**, 23(2) :990–1021, *Nonparametric regression on hidden Φ-mixing variables : identifiability and consistency of a pseudo-likelihood based estimation procedure*, T. Dumont and S. Le Corff

2017 — **Journal of Applied Probability**, 54(4) :1233–1260, *Optimal Scaling of the Random Walk Metropolis algorithm under L_p mean differentiability*, A. Durmus, S. Le Corff, É. Moulines, and G.O. Roberts

2017 — **EURASIP Journal on Advances in Signal Processing**, 54, *Particle rejuvenation of Rao-Blackwellized Sequential Monte Carlo smoothers for Conditionally Linear and Gaussian models*, T.N.M. Nguyen, S. Le Corff, and É. Moulines.

2015 — **IEEE Journal of Selected topics in Signal Processing**, 10(2) :366 – 375, *A shrinkage-thresholding metropolis adjusted langevin algorithm for bayesian variable selection*, A. Schreck, G. Fort, S. Le Corff, and É. Moulines

2014	**Signal Processing**, 101 :192–203, *Simultaneous localization and mapping problem in wireless sensor networks*, T. Dumont and S. Le Corff
2013	**Bernoulli**, 19(5B) :2222–2249, *Nonasymptotic deviation inequalities for smoothed additive functionals in nonlinear state-space models*, C. Dubarry and S. Le Corff
2013	**ACM : Transactions on Modeling and Computer Simulation**, Special Issue on Monte Carlo Methods in Statistics, 23(1) :1–22, *Convergence of a particle-based approximation of the block online Expectation Maximization algorithm*, S. Le Corff and G. Fort
2013	**Electronic Journal of Statistics**, 7 :763–792, *Online Expectation Maximization based algorithms for inference in hidden Markov models*, S. Le Corff and G. Fort

Conference Proceedings

2020	**Submitted**, ArXiv:2002.05438, *Backward importance sampling for partially observed stochatic differential equations*, M.-P. Étienne, P. Gloaguen, S. Le Corff and J. Olsson
2018	**IEEE Data Science Workshop (DSW)**, *Optimizing thermal comfort and energy consumption in a large building without renovation work*, S. Le Corff, A. Champagne, C. Charbit, G. Nozière, and É. Moulines
2013	**IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)**, *Online EM for indoor simultaneous localization and mapping*, T. Dumont and S. Le Corff
2012	**Latent Variable Analysis and Signal Separation (LVA/ICA)**, 131-138, *New online EM algorithms for general hidden Markov models. Application to the SLAM problem*, S. Le Corff, G. Fort, and É. Moulines
2011	**IEEE Workshop on Statistical Signal Processing (SSP)**, 197-200, *Fast computation of smoothed additive functionals in general state space models*, C. Dubarry and S. Le Corff
2011	**IEEE Workshop on Statistical Signal Processing (SSP)**, 225-228, *Online Expectation Maximization to solve the SLAM problem*, S. Le Corff and G. Fort

Talks

Invitations

- ISNPS2020 - International symposium on nonparametric statistics, Paphos, Cyprus (06/20).
- MHC2020 - Mixtures, Hidden Markov Models and Clustering Workshop, Institut de mathematique d'Orsay, France (06/20).
- Data Science and Finance conference, Siem Reap, Cambodia (03-19).
- École de statistiques bayésiennes, CIRM, Marseille, France (10/18).
- Advances in Finite Mixture and Other Non-regular Models, Guilin, Guangxi, China (08/18).
- International conference on Monte Carlo techniques, Paris, France (07/16).
- NIPS Workshop "Advances in Variational Inference", Montréal, Canada (12/14).
- Rencontres statistiques de Rochebrune, Rochebrune, France (04/14).

Other talks

- Rencontres statistiques de Rochebrune, Rochebrune, France (03/20).
- Séminaire de Probabilités et Statistique, Nice, France (12/19).
- 2018 IEEE Data Science Workshop, Lausanne, Switzerland, (06/18).
- Séminaire de statistiques du CMLA, ENS Paris-Saclay, France (05/18).
- Rencontres statistiques de Rochebrune, Rochebrune, France (03/18).
- European Meeting of Statisticians (EMS), Helsinki, Finland (07/17).
- Scalable statistical inference, Isaac Newton Institute, Cambridge, UK (07/17).
- 49èmes Journées de Statistique (JdS), Avignon, France (06/17).
- Séminaire parisien de statistiques, Paris, France (04/16).
- Séminaire de statistiques du laboratoire Jean Kuntzmann, Grenoble, France (04/16).
- Sequential Monte Carlo workshop (SMC2015), Paris, France (08/15).
- European Meeting of Statisticians (EMS), Amsterdam, Netherlands (07/15).
- Young Statisticians and Probabilists seminar, IHP, Paris, France (09/14).
- SuSTaIn Workshop "High-dimensional Stochastic Simulation and Optimisation in Image Processing", Bristol, UK (08/14).
- Séminaire parisien de statistiques, Paris, France (10/13).
- Séminaire Méthodes de Monte Carlo en Grande Dimension (BigMC), Paris, France (10/13).
- 36th Conference on Stochastic Processes and Their Applications, Boulder, Colorado (08/13).
- 5th Greek Stochastics (Jump processes), Kalamata, Greece (07/13).
- 38th International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Vancouver, Canada (05/13).
- Séminaire de statistiques AgroParisTech, Paris, France (03/13).
- Algorithms and Computationally Intensive Inference Seminar, Warwick, UK (11/12).
- Statistics, Applied Probability and Operational Research Seminar, Oxford, UK (11/12).
- Recent Advances in Sequential Monte Carlo, Warwick, UK (09/12).
- 8th World Congress in Probability and Statistics, Istanbul, Turkey (07/12).
- 10ème Colloque "Jeunes Probabilistes et Statisticiens", Marseille, France (04/12).

- Séminaire Méthodes de Monte Carlo en Grande Dimension (BigMC), Paris, France (12/11).
- Statistical Machine Learning in Paris (SMILE), Paris, France (10/10).
- 28th European Meeting of Statisticians (EMS), Athens, Greece (08/10).