Jeremy HENG

Associate Professor
Department: Information Systems, Data Analytics and Operations
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RESEARCH INTERESTS

Bayesian inference, Computational statistics, Computational statistics (such as sequential Monte

EDUCATION

2017	PhD in Statistics, University of Oxford, United Kingdom
2012	BSc in Statistics, University College London, United Kingdom

EMPLOYMENT

Full-time academic positions

2024 - Present	Associate Professor, ESSEC Business School, France
2019 - 2024	Assistant Professor, ESSEC Business School, Singapore

Other affiliations and appointments

2025 - 2026	Head of the BUSINESS ANALYTICS METHODS (BAM) Track, ESSEC Business School, France
2017 - 2019	Postdoctoral Fellow, Harvard University, United States of America

GRANTS AND HONORS

Awards and Honors

2022	2022 Blackwell-Rosenbluth Award, International Society for Bayesian Analysis,, United States of America

PUBLICATIONS

Journal Articles

HENG, J., DE BORTOLI, V., DOUCET, A. and THORNTON, J. (2025). Simulating diffusion bridges with score matching. *Biometrika*, 112(4), pp. asaf048.

HENG, J., DE BORTOLI, V. and DOUCET, A. (2024). Diffusion Schrödinger Bridges for Bayesian Computation. *Statistical Science*, 39(1), pp. 90-99.

HENG, J., HOUSSINEAU, J. and JASRA, A. (2024). On Unbiased Score Estimation for Partially Observed Diffusions. *Journal of Machine Learning Research*, 25(66), pp. 1-66.

HENG, J., JASRA, A., LAW, K. and TARAKANOV, A. (2023). On Unbiased Estimation for Discretized Models. *SIAM/ASA Journal on Uncertainty Quantification*, 11(2), pp. 10.1137/21M1460788.

FULOP, A., HENG, J., LI, J. and LIU, H. (2022). Bayesian Estimation of Long-Run Risk Models Using Sequential Monte Carlo. *Journal of Econometrics*, 228(1), pp. 62-84.

JASRA, A., HENG, J., XU, Y. and BISHOP, A.N. (2022). A Multilevel Approach for Stochastic Nonlinear Optimal Control. *International Journal of Control*, 95(5), pp. 1290-1304.

JASRA, A., HENG, J., XU, Y. and BISHOP, A.N. (2022). A Multilevel Approach for Stochastic Nonlinear Optimal Control. *International Journal of Control*, 95(5), pp. 1290-1304.

DAI, C., HENG, J., JACOB, P. and WHITELEY, N. (2022). An invitation to sequential Monte Carlo samplers. *Journal of the American Statistical Association*, 117(539), pp. 1587-1600.

HENG, J., DOUCET, A. and POKERN, Y. (2021). Gibbs flow for approximate transport with applications to Bayesian computation. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 83(1), pp. 157-187.

HENG, J., YU, F. and HENG, J. (2020). Multilevel Particle Filters for the Non-Linear Filtering Problem in Continuous Time. *Statistics and Computing*, 30, pp. 1381-1402.

HENG, J., YU, F. and HENG, J. (2020). Multilevel Particle Filters for the Non-Linear Filtering Problem in Continuous Time. *Statistics and Computing*, 30, pp. 1381-1402.

HENG, J. and JACOB, P. (2019). Unbiased Hamiltonian Monte Carlo with couplings. *Biometrika*, 106(2), pp. 287-302.

HENG, J., BISHOP, A.N., DELIGIANNIDIS, G. and DOUCET, A. (2019). Controlled Sequential Monte Carlo. *Annals of Statistics*, 48(5), pp. 2904-2929.

Conference proceedings

CHOPIN, N., FULOP, A., HENG, J. and THIERY, A.H. (2023). Computational Doob h-transforms for Online Filtering of Discretely Observed Diffusions. In: *Proceedings of the 40th International Conference on Machine Learning, PMLR 202:5904-5923*. Honolulu: Proceedings of Machine Learning Research.

DE BORTOLI, V., THORNTON, J., HENG, J. and DOUCET, A. (2021). Diffusion Schrödinger Bridge with Applications to Score-Based Generative Modeling. In: *NeurIPS 2021*. Proceedings of Machine Learning Research.

LIN, A., ZHANG, Y., HENG, J., ALLSOP, S.A., TYE, K.M. and JACOB, P. (2019). Clustering Time Series with Nonlinear Dynamics: A Bayesian Non-Parametric and Particle-Based Approach. In: *Proceedings of Machine Learning Research*.

JACOB, P., LIN, A., ZHANG, Y., HENG, J., ALLSOP, S.A., TYE, K.M. and BA, D. (2019). Clustering Time Series with Nonlinear Dynamics: A Bayesian Non-Parametric and Particle-Based Approach. In: *The 22nd International Conference on Artificial Intelligence and Statistics*. Proceedings of Machine Learning Research, pp. 2476-2484.

Conferences

JU, N., HENG, J. and JACOB, P. (2024). Statistical Inference for Individual-based Models of Disease Transmission. In: 2024 Eastern Asia Chapter International Society for Bayesian Analysis Conference. Hong Kong.

CHOPIN, N., FULOP, A., HENG, J. and THIERY, A.H. (2024). Computational Doob's h-transforms for Online Filtering. In: 6th Workshop on Sequential Monte Carlo Methods 2024. Edinburgh.

HENG, J. (2022). Diffusion Schrodinger Bridge with Applications to Score-based Generative Modeling. In: 5th International Conference on Econometrics and Statistics (EcoSta) 2022. Kyoto.

NIANQUIOA, J., HENG, J. and JACOB, P. (2022). Artificial Intelligence, Data challenges. In: 2022 Institute of Mathematical Statistics (IMS) Annual Meeting in Probability and Statistics. London.

FULOP, A., HENG, J. and LI, Y. (2021). Efficient Likelihood-based Estimation via Annealing for Dynamic Structural Macrofinance Models. In: 2021 European Winter Meetings of the Econometric Society. Barcelona.

HENG, J., POKERN, Y. and DOUCET, A. (2019). Gibbs Flow for Approximate Transport with Applications to Bayesian Computation. In: International Conference on Scientific Computation and Differential Equations (SciCADE 2019).

OTHER RESEARCH ACTIVITIES

Editorial Board Membership

2022 - 2023 Statistics and Computing