Houssam Zenati

Research Fellow, University College of London

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Experience

UCL, Gatsby Computational Neuroscience Unit — *London, UK*

Research Fellow — *Jan 2025 - Present*

- Causal Inference, Causal Mediation Analysis, Causal Sequential Decision Making

INRIA — *Paris Saclay, France*

Postdoctoral Researcher — *Nov 2023 - Dec 2024*

- Causal Inference, Causal Mediation Analysis, Causal Sequential Decision Making

INRIA & Criteo — *Grenoble, France*

Doctoral Researcher — *April 2019 - July 2023*

- Counterfactual Logged Bandit, Offline policy learning, Stochastic and Adversarial bandits

IBM Research, AI — *Tokyo, Japan*

Research Intern, Reinforcement Learning — *June 2018 - August 2018*

- Deep Reinforcement Learning: learning control policies for constrained robotics problem

Institute for Infocomm Research, A*STAR — *Singapore*

Research Intern, Computer Vision, Deep Learning — *Aug 2017 - May 2018*

- Unsupervised Anomaly Detection using Deep Generative Models, Semi-supervised Learning, Online Optimization

Education

Université Grenoble Alpes — *Grenoble, France*

PhD in Computational and Applied Mathematics — *July 2020 - Sept 2023*

- Efficient methods in counterfactual policy learning and sequential decision making

École Normale Supérieure Paris-Saclay — *Paris, France*

M.Sc. in Computational and Applied Mathematics — *Sept. 2018 - Dec. 2019*

- MVA - Reinforcement Learning, Probabilistic Graphical Models, Deep Learning, Computer Vision, NLP

École Centrale Paris — *Paris, France*

M.Eng./B.Eng. in Applied Mathematics — *Sept. 2015 - Dec. 2019*

- Sequential learning, Statistical Learning, Probability Theory, Algorithms, Software Engineering. B.Eng. obtained in Sept. 2016

Lycée Louis Le Grand — *Paris, France*

Preparatory Classes (CPGE MPSI/MP*) — *Sept. 2013 - July 2015*

- Fundamental Mathematics, Physics, Engineering and Computer Science: General Algebra, Linear Algebra, Numerical Analysis

Research

2023 **PhD Thesis**, Zenati, H. 2023, *Efficient methods in counterfactual policy learning and sequential decision making PhD Dissertation* — *Grenoble, France*

Working Papers

2025 **Preprint**, Zenati, H., Abecassis, J., Josse, J. and Thirion, B. 2024, *Finite Sample Performances of Semi-parametric estimators in Mediation Analysis,*

2025 **Preprint**, Zenati, H., Abecassis, J., Josse, J. and Thirion, B. 2024, *Double Debiased Machine Learning for Mediation Analysis with Continuous Treatment,*

2024 **Preprint**, Abecassis, J., Zenati, H., Boumaïza, S., Josse, J. and Thirion, B. 2024, *Causal mediation analysis with one or multiple mediators: a comparative study,*

Conference Papers

2024	**Neural Information Process Systems**, Zhou, J., Rahier, T., Arbel, J., Zenati, H., and Gaillard, P. 2023, *Leveraging Semi-Bandit Feedback in Combinatorial Bandits with Dependent Arms, NeurIPS 2024*	*Vancouver, Canada*
2023	**International Conference on Machine Learning**, Zenati, H., Diemert E., Martin, M., Mairal J. and Gaillard, P. 2023, *Sequential Counterfactual Risk Minimization, ICML 2023*	*Hawaii, US*
2022	**International Conference on Machine Learning**, Martin, M., Mertikopoulos, P., Rahier, T. and Zenati, H. 2022, *Nested Exponential Weights and the Red Bus / Blue Bus Paradox ICML 2022*	*Baltimore, US*
2022	**International Conference on Artificial Intelligence and Statistics**, Zenati, H., Bietti, A., Diemert, E., Mairal J., Martin, M., and Gaillard, P. 2022, *Efficient Kernel UCB for Contextual Bandits, AISTATS 2022*	*Virtual*
2020	**ArXiv Preprint**, Zenati, H., Bietti, A., Diemert, E., Mairal J., Martin, M., and Gaillard, P. 2020, *Counterfactual Learning of Stochastic Policies with Continuous Actions: from Models to Offline Evaluation,*	
2019	**International Conference on Learning Representations**, Mertikopoulos, P., Lecouat, B., Zenati, H., Foo, C.S., Chandrasekhar V. and Piliouras G. 2018, *Optimistic mirror descent in saddle-point problems: Going the extra(-gradient) mile, ICLR 2019*	*New Orleans, US*
2018	**International Conference on Data Mining**, Zenati, H., Romain, M., Foo, C.S., Lecouat, B. and Chandrasekhar V. 2018, *Adversarially Learned Anomaly Detection, in the Proceedings of IEEE ICDM 2018* ***[Code]***	*Singapore*

Workshop papers

2020	**International Conference on Learning Representations**, Zenati, H., Bietti, A., Martin, M., Diemert, E. and Mairal J. 2020, *Optimization Approaches for Counterfactual Risk Minimization with Continuous Actions, ICLR 2020, CDLM Workshop*	*Addis Abada, Ethiopia*
2019	**International Conference on Medical Image Computing and Computer Assisted Intervention**, Ouardini, K., Yang, H., Unnikrishnan, B., Romain, M., Garcin, C., Zenati, H., Campbell, P., Chiang, M., Kalpathy-Cramer, J., Chandrasekhar, V., Krishnaswamy, P., Foo C.S. 2019, *Towards practical unsupervised anomaly detection on retinal images, MICCAI 2019, Workshop*	*Shenzhen, China*
2018	**Neural Information Processing Systems**, Lecouat, B., Chang, K., Foo, C.S., Unnikrishnan, B., Brown, J., Zenati, H., Beers, A., Chandrasekhar, V., Kalpathy-Cramer, J. and Krishnaswamy, P. 2018, *Semi-Supervised Deep Learning for Abnormality Classification in Retinal Images, NeurIPS 2018, ML4H Workshop*	*Montréal, Canada*
2018	**International Conference on Learning Representations**, Lecouat, B.,Foo, C.S., Zenati, H. and Ramaseshan V. 2018, *Semi-Supervised Learning With GANs: Revisiting Manifold Regularization, ICLR 2018, Workshop Track*	*Vancouver, Canada*
2018	**International Conference on Learning Representations**, Zenati, H., Lecouat, B., Foo, C.S., Manek, G. and Chandrasekhar V. 2018, *Efficient GAN-Based Anomaly Detection, Submitted to ICLR Workshop 2020* ***[Code]***	

Awards

2018	**IEEE ICDM**, Student Travel Award	*Singapore*
2017	**SIPGA**, Awardee of Singapore International Pre-Graduate Award	*Singapore*

References

Academic Supervisors.
Julien Mairal,
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Pierre Gaillard,
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Industrial Supervisors.
Eustache Diemert,
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Senior researchers.
Panagiotis Mertikopoulos,
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