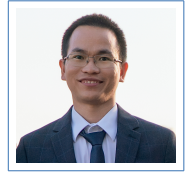


# TrungTin Nguyen

## Long Curriculum Vitae

Postdoctoral Research Fellow  
The University of Queensland  
✉ [trungtin.nguyen@uq.edu.au](mailto:trungtin.nguyen@uq.edu.au)

📄 [Homepage](https://trung-tinnnguyen.github.io): [trung-tinnnguyen.github.io](https://trung-tinnnguyen.github.io)  
🔗 [Short CV Version](#), October 17, 2024



*"The book of nature is written in the language of mathematics." (Galileo G., 1890).*  
*"Essentially, all models are wrong, but some models that know when they are wrong, are useful." (adapted from George E.P. Box, 1979).*

## Academic Appointment

- 04/12/2023–present **Postdoctoral Research Fellow**, [School of Mathematics and Physics, The University of Queensland](#), Brisbane, Australia.  
**Topic**: Mathematical analysis of operator learning with artificial neural networks.  
**Mentors**: [Hien Duy Nguyen](#), and [Xin Guo](#).
- 01/01/2022–30/11/2023 **Postdoctoral Research Fellow (Contract Inria + Contract UGA MIAI Grenoble Alpes during 01/05/2023–30/09/2023)**, [Statify Team, Inria centre at the University Grenoble Alpes](#), Grenoble, France.  
**Topic**: Bayesian model selection and simulated-based inference for complex and high-dimensional models.  
**Mentors**: [Florence Forbes](#), and [Julyan Arbel](#).

## Education

- 2019–2022 **Doctor of Philosophy**, [Normandie Université](#), Caen, France.  
Major in Statistics and Data Science.  
**Thesis title**: [Model selection and approximation in high-dimensional mixture of experts models: from theory to practice](#).  
**Advisors**: [Faïcel Chamroukhi](#). **Rapporteurs**: [Sylvain Arlot](#), and [Judith Rousseau](#).  
**Committee members**: [Christophe Biernacki](#), [Hien Duy Nguyen](#), and [Gaëlle Chagny](#).
- 2017–2019 **Master of Science, Technology and Health**, [Université d'Orléans](#), Orléans, France, GPA: 18/20.  
Mention: *Très Bien*. Major in Applied Mathematics.  
**Thesis title**: Reinforcement learning for resource allocation problems using a partially observable Markov decision process.  
**Advisor**: [Le Thi Hoai An](#).
- 2013–2017 **Bachelor of Science**, [Vietnam National University-Ho Chi Minh University of Science \(VNU-HCM\)](#), Ho Chi Minh City, Vietnam, GPA: 9.17/10. Rank: 2/1557, Summa Cum Laude.  
Honors Program in Mathematics and Computer Science. Major in Probability and Statistics.  
**Thesis title**: Multiplicative censoring model.  
**Advisor**: [Dang Duc Trong](#).

## Research Interests

- Statistical learning** [Model selection](#) (minimal penalties and slope heuristics, non-asymptotic oracle inequalities), [simulation-based inference](#) (approximate Bayesian computation, Bayesian synthetic likelihood, method of moments), [Bayesian nonparametrics](#) (Gibbs-type priors, Dirichlet process mixture), [high-dimensional statistics](#) (variable selection via Lasso and penalization, graphical models), [uncertainty estimation](#), [missing data](#) (imputation methods, likelihood-based approaches with missing data).

**Machine learning** [Supervised learning](#) (deep hierarchical mixture of experts, deep neural networks), [unsupervised learning](#) (clustering via mixture models, dimensionality reduction via principal component analysis, deep generative models via variational autoencoders, generative adversarial networks and normalizing flows), [reinforcement learning](#) (partially observable Markov decision process), [structured prediction](#) (probabilistic graphical models).

**Optimization** [Robust and effective optimization algorithms for mixture models](#) (MM algorithm, expectation-maximization, variational Bayesian inference, Markov chain Monte Carlo methods), [difference of convex algorithm](#), [optimal transport](#) (Wasserstein distance, voronoi loss function)

**Applications** [Natural language processing](#) (large language model, text classification/retrieval, openChat), [remote sensing](#) (planetary science, e.g., retrieval of Mars surface physical properties from hyper-spectral images), [signal processing](#) (sound source localization), [biostatistics](#) (genomics, transcriptomics, proteomics), [computer vision](#) (image segmentation, image classification/retrieval), [quantum chemistry, drug discovery, and materials science](#) (supervised and unsupervised learning on molecular modeling).

## Publications

**Total 5 Peer-reviewed Journal Publications** (Electronic Journal of Statistics, Statistics and Computing, Communications in Statistics - Theory and Methods) + **13 Peer-reviewed Conference Publications** (3 ICML, 2 NeurIPS (1 Spotlight), 1 AISTATS, 1 IJCNN, 1 AJCAI) + **7 Preprints**.

### Deep neural networks

- 2024 Hoai-Chau Tran, Duy MH Nguyen, Manh-Duy Nguyen, **TrungTin Nguyen**, Ngan Hoang Le, Pengtao Xie, Daniel Sonntag, James Zou, Binh T. Nguyen, and Mathias Niepert. [Accelerating Transformers with Spectrum-Preserving Token Merging](#). In *Advances in Neural Information Processing Systems, NeurIPS 2024*, Acceptance rate 25.8% over 15671 submissions, December 2024.
- 2024 Quang Pham, Giang Do, Huy Nguyen, **TrungTin Nguyen**, Chenghao Liu, Mina Sartipi, Binh T Nguyen, Savitha Ramasamy, Xiaoli Li, Steven Hoi, and Nhat Ho. [CompeteSMoE-Effective Training of Sparse Mixture of Experts via Competition](#). *arXiv preprint arXiv:2402.02526*, 2024.
- 2024 Duy MH Nguyen, Nina Lukashina, Tai Nguyen, An T Le, **TrungTin Nguyen**, Nhat Ho, Jan Peters, Daniel Sonntag, Viktor Zaverkin, and Mathias Niepert. [Structure-Aware E\(3\)-Invariant Molecular Conformer Aggregation Networks](#). In *Proceedings of the 41st International Conference on Machine Learning, ICML 2024*, Acceptance rate 27.5% over 9,473 submissions, July 2024.
- 2024 Duy M. H. Nguyen, Nghiem T. Diep, Trung Q. Nguyen, Hoang-Bao Le, Tai Nguyen, Tien Nguyen, **Nguyen, TrungTin**, Nhat Ho, Pengtao Xie, Roger Wattenhofer, James Zhou, Daniel Sonntag, and Mathias Niepert. [LoGra-Med: Long Context Multi-Graph Alignment for Medical Vision-Language Model](#). *arXiv preprint arXiv:2410.02615*, Oct 2024.
- 2023 Truong Giang Do, Huy Khiem Le, Quang Pham, **TrungTin Nguyen**, Binh T. Nguyen, Thanh-Nam Doan, Chenghao Liu, Savitha Ramasamy, Xiaoli Li, and Steven HOI. [HyperRouter: Towards Efficient Training and Inference of Sparse Mixture of Experts](#). In *Proceedings of the 2023 Empirical Methods in Natural Language Processing, EMNLP 2023 Main*, Acceptance rate 14% over 1041 submissions, December 2023.

### Asymptotic Statistics

- 2024 Jacob Westerhout, **TrungTin Nguyen**, Xin Guo, and Hien Duy Nguyen. [On the Asymptotic Distribution of the Minimum Empirical Risk](#). In *Proceedings of the 41st International Conference on Machine Learning, ICML 2024*, Acceptance rate 27.5% over 9,473 submissions, July 2024.

## Approximation capabilities and convergence rates of the mixture of experts models

- 2024 Huy Nguyen, **TrungTin Nguyen**, Khai Nguyen, and Nhat Ho. [Towards Convergence Rates for Parameter Estimation in Gaussian-gated Mixture of Experts](#). In *Proceedings of The 27th International Conference on Artificial Intelligence and Statistics, AISTATS 2024*, Acceptance rate 27.6% over 1980 submissions, May 2024.
- 2024 Huy Nguyen, Pedram Akbarian, **TrungTin Nguyen**, and Nhat Ho. [A General Theory for Softmax Gating Multinomial Logistic Mixture of Experts](#). In *Proceedings of the 41st International Conference on Machine Learning, ICML 2024*, Acceptance rate 27.5% over 9,473 submissions, July 2024.
- 2024 Mark Chiu Chong, Hien Duy Nguyen, and **TrungTin Nguyen**. [Risk Bounds for Mixture Density Estimation on Compact Domains via the h-Lifted Kullback–Leibler Divergence](#). *arXiv preprint arXiv:2404.12586*, 2024.
- 2023 Huy Nguyen, **TrungTin Nguyen**, and Nhat Ho. [Demystifying Softmax Gating Function in Gaussian Mixture of Experts](#). In *Advances in Neural Information Processing Systems, NeurIPS 2023 Spotlight*, Acceptance rate 3.6% over 12343 submissions, December 2023.
- 2022 **TrungTin Nguyen**, Faicel Chamroukhi, Hien D. Nguyen, and Geoffrey J. McLachlan. [Approximation of probability density functions via location-scale finite mixtures in Lebesgue spaces](#). *Communications in Statistics - Theory and Methods*, pages 1–12, May 2022.
- 2021 Hien Duy Nguyen, **TrungTin Nguyen**, Faicel Chamroukhi, and Geoffrey John McLachlan. [Approximations of conditional probability density functions in Lebesgue spaces via mixture of experts models](#). *Journal of Statistical Distributions and Applications*, volume 8, page 13, 2021.
- 2020 **TrungTin Nguyen**, Hien D Nguyen, Faicel Chamroukhi, and Geoffrey J McLachlan. [Approximation by finite mixtures of continuous density functions that vanish at infinity](#). *Cogent Mathematics & Statistics*, volume 7, page 1750861. Cogent OA, 2020.

## Model selection

- 2023 **TrungTin Nguyen**, Dung Ngoc Nguyen, Hien Duy Nguyen, and Faicel Chamroukhi. [A non-asymptotic risk bound for model selection in high-dimensional mixture of experts via joint rank and variable selection](#). In *Australasian Joint Conference on Artificial Intelligence 2023, AJCAI 2023 Long Oral Presentation*, Acceptance rate 11% over 213 submissions, Brisbane, Australia, November 2023.
- 2022 **TrungTin Nguyen**, Hien Duy Nguyen, Faicel Chamroukhi, and Florence Forbes. [A non-asymptotic approach for model selection via penalization in high-dimensional mixture of experts models](#). *Electronic Journal of Statistics*, volume 16, pages 4742 – 4822, 2022. Publisher: Institute of Mathematical Statistics and Bernoulli Society.
- 2022 **TrungTin Nguyen**, Faicel Chamroukhi, Hien Duy Nguyen, and Florence Forbes. [Model selection by penalization in mixture of experts models with a non-asymptotic approach](#). In *JDS 2022 - 53èmes Journées de Statistique de la Société Française de Statistique (SFdS)*, Lyon, France, June 2022.
- 2021 **TrungTin Nguyen**, Faicel Chamroukhi, Hien Duy Nguyen, and Florence Forbes. [Non-asymptotic model selection in block-diagonal mixture of polynomial experts models](#). *arXiv preprint arXiv:2104.08959*, 2021.
- 2021 **TrungTin Nguyen**. [Model Selection and Approximation in High-dimensional Mixtures of Experts Models: From Theory to Practice](#). Ph.D. Thesis, Normandie Université, December 2021.
- 2020 **TrungTin Nguyen**, Hien D Nguyen, Faicel Chamroukhi, and Geoffrey J McLachlan. [An  \$l\_1\$ -oracle inequality for the Lasso in high-dimensional mixtures of experts models](#). *arXiv preprint arXiv:2009.10622*, 2020.

## Bayesian nonparametrics

- 2023 **TrungTin Nguyen**, Florence Forbes, Julyan Arbel, and Hien Duy Nguyen. [Bayesian nonparametric mixture of experts for high-dimensional inverse problems](#). *Preprint. hal-04015203*, March 2023.

- 2022 **TrungTin Nguyen**, Florence Forbes, and Julian Arbel. Bayesian nonparametric mixture of experts for high-dimensional inverse problems. In *BNP13 – 13th Conference on Bayesian Nonparametrics*, Puerto Varas, Chile, 2022.
- [Simulation-based inference](#)
- 2024 Hien Duy Nguyen, **TrungTin Nguyen**, and Florence Forbes. [Bayesian Likelihood Free Inference using Mixtures of Experts](#). In *International Joint Conference on Neural Networks, IJCNN 2024*, Acceptance rate 52% over 3272 submissions, June 2024.
- 2023 Hien Duy Nguyen, **TrungTin Nguyen**, Julian Arbel, and Florence Forbes. [Concentration results for approximate Bayesian computation without identifiability](#). *Preprint. hal-03987197*, February 2023.
- 2022 Florence Forbes, Hien Duy Nguyen, **TrungTin Nguyen**, and Julian Arbel. [Supporting Information Summary statistics and discrepancy measures for approximate Bayesian computation via surrogate posteriors](#). *Statistics and Computing*, volume 32, page 85, October 2022.
- 2022 Florence Forbes, Hien Duy Nguyen, **TrungTin Nguyen**, and Julian Arbel. [Mixture of expert posterior surrogates for approximate Bayesian computation](#). In *JDS 2022 - 53èmes Journées de Statistique de la Société Française de Statistique (SFdS)*, Lyon, France, June 2022.
- 2022 Florence Forbes, Hien Duy Nguyen, **TrungTin Nguyen**, and Julian Arbel. [Summary statistics and discrepancy measures for approximate Bayesian computation via surrogate posteriors](#). *Statistics and Computing*, volume 32, page 85, October 2022.
- 2021 Julian Arbel, Florence Forbes, Hien Duy Nguyen, and **TrungTin Nguyen**. [Approximate Bayesian computation with surrogate posteriors](#). In *ISBA 2021 - World Meeting of the International Society for Bayesian Analysis*, Marseille, France, June 2021.

## Fellowships and Awards

- 06/2024 [Early Career Travel Award](#) (1000 AUD) granted by [The Ninth Pacific Rim Conference in Mathematics](#).
- 2023–2024 Postdoctoral Research Fellowships granted by [Australian Research Council Discovery Projects 230100905](#), [The University of Queensland](#), Australia.
- 10/2022 [BNP13 Junior Travel Award](#) (1000 USD) granted by [International Society for Bayesian Analysis](#).
- 2022–2025 [Qualifications aux fonctions de Maître de Conférences](#). Section 26. [Mathématiques appliquées et applications des mathématiques](#). *Designated rapporteurs*: [Fabienne Comte](#), and [Fanny Villers](#).
- 2022–2023 Postdoctoral Fellowships granted by [Inria centre at the University Grenoble Alpes](#) and [MIAI Grenoble Alpes](#)), France.
- 2018–2021 Ph.D. Scholarship granted by [Ministère de l'Enseignement Supérieur et de la Recherche](#), France.
- 2017 Highest Distinction Graduation Award and Outstanding Student Award, [VNU-HCM](#), Vietnam.
- 2014–2017 Scholarship of the National Program for the Development of Mathematics 2010–2020 of [Vietnam Institute for Advanced Study in Mathematics \(VIASM\)](#), Vietnam.

## Supervision and Teaching Experiences

- 07–11/2024: [Data Science Capstone Project 1 \(DATA7901\)](#) (Supervision: 4 Students). Responsible professor: [Slava Vaisman](#), [Postgraduate Coursework](#), [The University of Queensland](#), Australia.
- 02–11/2024: [Introduction to Data Science \(DATA7001\)](#) (Guest Lecturer, Tutorial Content and Practical Session, 30h). Responsible professor: [Xin Guo](#), [Postgraduate Coursework](#), [The University of Queensland](#), Australia.
- 01–04/2023: [Statistical analysis and document mining \(Lecturer for Complementary Course, 17h\)](#). Responsible professor: [Pedro Rodrigues](#), [Master 1 of Applied Mathematics](#), [Université Grenoble Alpes](#), France.

- 09–12/2022: **Méthodes statistiques pour la biologie - STA301 (Lecturer and Tutorial Content, 23h). Responsible professor: Julien Chevallier**, *Licence Sciences et Technologies - BIO, Université Grenoble Alpes*, France.
- Fall 2018: **Mathematical and numerical foundations of modeling and simulation using partial differential equations (Lecturer for Preparatory Course, 24h). Responsible professor: Jing-Rebecca Li (IDEFIX team, Inria)**, *French-Vietnam Master 2 in Applied Mathematics, VNU-HCM*, Vietnam.
- Fall 2017: **Principles of Mathematical Analysis (Teaching Assistant, 30h). Responsible professor: Duong Minh Duc**, *Bachelor in Mathematics and Computer Science, VNU-HCM*, Vietnam.

## Collaborators (in random order)

1. **Geoff McLachlan**: Professor of Statistics (Personal Chair), *School of Mathematics and Physics, The University of Queensland, Brisbane, Australia*.
2. **Florence Forbes**: Senior Researcher (Director of Research), *Statify Team, Inria centre at the University Grenoble Alpes, Grenoble, France*.
3. **Faïcel Chamroukhi**: Professor of Statistics and Data Science, *Université de Caen Normandie, Lab. of Mathematics Nicolas Oresme (LMNO), UMR CNRS 6139*; Scientific head of Data Science and Artificial Intelligence, *IRT SystemX, the Research & Technology Organisation of Université Paris-Saclay, Palaiseau, France*.
4. **Hien Duy Nguyen**: Associate Professor, *School of Computing, Engineering and Mathematical Sciences, La Trobe University, Bundoora, Victoria, Australia*; and Professor, *Institute of Mathematics for Industry, Kyushu University, Fukuoka, Japan*.
5. **Nhat Ho**: Assistant Professor, *Department of Statistics and Data Sciences, The University of Texas at Austin, Austin, Texas, United States*.
6. **Xin Guo**: Senior Lecturer, *School of Mathematics and Physics, The University of Queensland, Brisbane, Australia*.
7. **Julyan Arbel**: Associate Researcher (Chargé de Recherche), *Statify Team, Inria centre at the University Grenoble Alpes; Laboratoire Jean Kuntzmann, member of Université Grenoble Alpes Grenoble, Grenoble, France*.
8. **Binh Nguyen**: Associate Professor of Computer Science and the Head of the Department of Computer Science, *Faculty of Mathematics and Computer Science, University of Science (VNUHCM-US), Vietnam National University (VNUHCM), Ho Chi Minh City, Vietnam*.
9. **Quang Pham**: Research Scientist, *Machine Intelligence department, Institute for Infocomm Research (I2R), A\*Star, Singapore*.
10. **Huy Nguyen**: PhD Candidate, *Department of Statistics and Data Sciences, The University of Texas at Austin, Austin, Texas, United States*.
11. **Khai Nguyen**: PhD Candidate, *Department of Statistics and Data Sciences, The University of Texas at Austin, Austin, Texas, United States*.
12. **Dung Ngoc Nguyen**: Postdoctoral Research Fellow, *Department of Statistical Sciences, University of Padova, Padova, Italy*.
13. **Ho Minh Duy Nguyen**: PhD Candidate, *Max Planck Research School for Intelligent Systems & DFKI, Stuttgart, Germany*.
14. **Giang Truong Do**: Master's Student, *The University of Tennessee at Chattanooga, Tennessee, United States*.
15. **Le Huy Khiem**: PhD Student, *University of Notre Dame, Indiana, United States*.
16. **Jacob Westerhout**: PhD Student, *School of Mathematics and Physics, The University of Queensland, Brisbane, Australia*.

## Professional Services

Journal Reviewing (See certificate)

IEEE Transactions on Information Theory (The Institute of Electrical and Electronics Engineers): 1 paper.

Electronic Journal of Statistics (Institute of Mathematical Statistics, Bernoulli Society for Mathematical Statistics and Probability): 2 papers.

Journal of the American Statistical Association (Taylor Francis): 2 papers.

Statistics and Computing (Springer): 2 papers.

[Computational Statistics and Data Analysis \(Elsevier\)](#): 4 papers.  
[Neurocomputing \(Elsevier\)](#): 1 paper.  
[Biometrical Journal \(Wiley\)](#): 2 papers.  
[Australian & New Zealand Journal of Statistics \(Wiley\)](#): 2 paper.  
[Communications in Statistics - Theory and Methods \(Taylor Francis\)](#): 2 papers.  
 Conference Reviewing  
[International Conference on Artificial Intelligence and Statistics \(AISTATS\)](#): 4 papers.  
[International Conference on Learning Representations \(ICLR\)](#): 3 papers.  
[Annual Conference on Neural Information Processing Systems \(NeurIPS\)](#): 1 paper.  
[Annual Meeting of the Association for Computational Linguistics \(ACL\)](#): 3 papers.  
[Proceedings of the Research School on Statistics and Data Science \(RSSDS 2019\) \(Springer\)](#): 2 papers.  
 Editorial Board/Program Committee  
[Australian Statistical Conference 2025 \(ASC2025\)](#): Scientific Program Committee.  
[The IEEE World Congress on Computational Intelligence – The International Joint Conference on Neural Networks \(IJCNN 2024\)](#): Session Chair.  
[The Queensland Branch of the Statistical Society of Australia \(SSA QLD 2024\)](#): General Councillor.  
[Research School on Statistics and Data Science \(RSSDS 2019, Springer\)](#): Program Committee.  
[International Journal of Machine Intelligence and Sensory Signal Processing \(Inderscience\)](#): Associate Editors.

## Professional Memberships

03/2024 [Statistical Society of Australia \(SSA\)](#).  
 08/2021 [Institute of Mathematical Statistics \(IMS\)](#).  
 01/2020 [International Society for Bayesian Analysis \(ISBA\)](#).  
 01/2022 [Société Française de Statistique \(SFdS\)](#).

## Conference, Seminar, Workshop Presentations

07/2024 Towards Understanding Mixture of Experts at [Bayesian Learning and Network Analysis Workshop](#), Vietnam Institute for Advanced Study in Mathematic, Hanoi, Vietnam (Invited Speaker).  
 07/2024 Bayesian Likelihood Free Inference Using Mixtures of Experts at [The IEEE World Congress on Computational Intelligence](#), Yokohama, Japan (Oral presentation).  
 06/2024 Demystifying Softmax Gating Function in Gaussian Mixture of Experts at [The Ninth Pacific Rim Conference in Mathematics](#), Mathematical Sciences Institute (MSI), Australian National University (ANU), Darwin, Australia (Contributed Talk and Poster Session).  
 05/2024 Towards Convergence Rates for Parameter Estimation in Gaussian-gated Mixture of Experts at [The Grenoble Artificial Intelligence for Physical Sciences](#), Université Grenoble Alpes, Grenoble, France (Poster Session).  
 05/2024 Demystifying parameter estimation in mixtures of experts at [Bayes-Duality Seminar](#), The Bayes-Duality Project, Online (Invited Speaker).  
 08/2023 Summary statistics and discrepancy measures for approximate Bayesian computation via surrogate posteriors at [The 10th Vietnam Mathematical Congress](#), Da Nang, Vietnam (Oral presentation).  
 07/2023 Summary statistics and discrepancy measures for approximate Bayesian computation via surrogate posteriors at [Summer school on Bayesian statistics and computation](#), Ho Chi Minh, Vietnam (Poster presentation).



- 12/2022 A non-asymptotic approach for model selection via penalization in high-dimensional mixture of experts models at [2022 IMS International Conference on Statistics and Data Science \(ICSDS\)](#), Florence, Italy (Oral presentation).
- 11/2022 A non-asymptotic approach for model selection via penalization in high-dimensional mixture of experts models at [Séminaire Données et Aléatoire Théorie & Applications, Laboratoire Jean Kuntzmann](#), Grenoble, France (Invited Speaker).
- 10/2022 Bayesian nonparametric mixture of experts for high-dimensional inverse problems at [BNP13 – 13th Conference on Bayesian Nonparametrics](#), Puerto Varas, Chile (Oral presentation).
- 06/2022 Model selection by penalization in mixture of experts models with a non-asymptotic approach at [JDS 2022 - 53èmes Journées de Statistique de la Société Française de Statistique \(SFdS\)](#), Lyon, France (Oral presentation).
- 05/2022 A non-asymptotic approach for model selection via penalization in high-dimensional mixture of experts models at [Seminar on Applied Statistics, Vietnam Institute for Advanced Study in Mathematics, Vietnam](#) (Invited Speaker).
- 04/2022 A non-asymptotic approach for model selection via penalization in mixture of experts models at [Statlearn 2022, Institut d'Etudes Scientifiques de Cargèse](#), Corsica (Poster presentation)
- 03/2022 A non-asymptotic model selection in mixture of experts models at [Séminaire de Statistique Rennais, ENSAI École Nationale de Statistique et Analyse de l'Information](#), Rennes, France (Invited Speaker).
- 10/2021 Model Selection and Approximation in High-dimensional mixture of experts Models: From Theory to Practice at [Jed 2021: Journée scientifique de l'École Doctorale 2021](#), Le Havre, France (Oral presentation).
- 09/2021 Approximation and non-asymptotic model selection in mixture of experts models at [Journée Thématique: "Intelligence Artificielle - Applications et défis mathématiques"](#), INSA Rouen Normandie, Rouen, France (Poster session).
- 06/2021 Non-asymptotic model selection in mixture of polynomial experts models at [MHC2021 Mixtures Hidden Markov model Clustering](#), Institut de Mathématique d'Orsay, Paris, France (Poster session).
- 04/2021 Non-asymptotic model selection for the Gaussian-gated localized mixture of experts regression models at [MiMo 2021: Workshop on Mixture Models](#), Laboratoire de Mathématiques Raphaël Salem, Université de Rouen Normandie, France (Invited speaker).

## Projects

- 2023–2026 **Member of the [WOMBAT \(Variance-reduced Optimization Methods and Bayesian Approximation Techniques for scalable inference\)](#).**
  - Principal investigator:
    - [Florence Forbes](#) (Statify Inria Grenoble, France),
    - [Hien Duy Nguyen](#) (School of Computing, Engineering and Mathematical Sciences, La Trobe University, Bundoora, Victoria, Australia).
  - Other participants:
    - Queensland University of Technology, Brisbane, Australia,
    - The University of Queensland, Brisbane, Australia,
    - Swinburne University of Technology, Melbourne, Australia
    - The University of Adelaide, Australia.
    - Université de Caen Normandie, France.
  - Website: <https://team.inria.fr/statify/projects/WOMBAT/>

- 2019–2021 **Member of the LANDER (Latent Analysis, Adversarial Networks, and DimEnsionality Reduction).**
- Principal investigator:
    - [Florence Forbes](#) (Mistis Inria Grenoble Rhone-Alpes, France),
    - [Hien Duy Nguyen](#) (School of Mathematics and Physics, The University of Queensland, Australia).
  - Other participants:
    - Queensland University of Technology, Brisbane, Australia,
    - Swinburne University of Technology, Melbourne, Australia
    - Université de Caen Normandie, France.
  - Website: <https://team.inria.fr/statify/projects/lander/>
  - My contributions in this project: [A non-asymptotic approach for model selection via penalization in high-dimensional mixture of experts models](#). *Electronic Journal of Statistics*, 2022.

## Selected Academic Experiences

- 12/2022 **Accomplished an online course [Machine Learning Specialization](#), Stanford University, USA**, instructed by [Professor Andrew Ng et al.](#).  
Including 3 courses:
- Supervised Machine Learning: Regression and Classification. Grade: 100%.
  - Advanced Learning Algorithms. Grade: 100%.
  - Unsupervised Learning, Recommenders, Reinforcement Learning. Grade: 100%.
- Course Certificates:  
<https://coursera.org/share/a9473e1b59c38bbde2f413bed53f3ebf>
- 07/2019 **Participated in [3rd International Summer School on Deep Learning \(39 hours\)](#), Warsaw, Poland.**  
Including some featured courses:
- *Deep Generative Models* by [Aaron Courville](#) (University of Montréal, Canada).
  - *Dive into Deep Learning* by [Alex Smola](#) (Amazon, USA).
  - *Mathematics of Deep Learning* by [Rene Vidal](#) (Johns Hopkins University, USA).
- 06-09/2018 **Accomplished an online course [Deep Learning Specialization](#), Stanford University, USA**, instructed by [Professor Andrew Ng et al.](#).  
Including 5 courses:
- Neural Networks and Deep Learning. Grade: 100%.
  - Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization. Grade: 100%.
  - Structuring Machine Learning Projects. Grade: 98.3%.
  - Convolutional Neural Networks. Grade: 98.9%.
  - Sequence Models. Grade: 100%.
- Course Certificates:  
<https://coursera.org/share/3d5d2ffa4a112d75883b62a22d4a132c>

## Languages

- |            |                             |   |
|------------|-----------------------------|---|
| Vietnamese | <b>Mother tongue</b>        |   |
| English    | <b>IELTS 7.0/9.0 (2017)</b> | <i>Excellent reading and listening skills, good at writing and speaking.</i>  |
| French     | <b>Intermediate B2</b>      | <i>Good reading and writing skills, can understand isolated sentences and common phrases in listening and speaking.</i> |

## Computer Skills

- |                       |   |
|-----------------------|---|
| Programming Languages | Advanced R, Advanced Python (Pytorch, Sci-kit Learn, Numpy, Matplotlib), MATLAB, C++, Julia, SAS. |
| Operating Systems     | Linux, macOS, Microsoft Windows.  |
| Softwares             | LaTeX, Microsoft Offices.   |



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## Referees

### **Hien Duy Nguyen**

*Associate Professor*

*School of Computing, Engineering  
and Mathematical Sciences*

*La Trobe University, Australia*

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### **Geoffrey McLachlan**

*Professor of Statistics*

*School of Mathematics and Physics*

*The University of Queensland, Australia*

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### **Florence Forbes**

*Senior Researcher*

*Head of the Statify team*

*Inria centre at the University Grenoble Alpes, France*

✉ [florence.forbes@inria.fr](mailto:florence.forbes@inria.fr)

### **Nhat Ho**

*Assistant Professor*

*Department of Statistics and Data Sciences*

*The University of Texas at Austin, United States*

✉ [minhnhat@utexas.edu](mailto:minhnhat@utexas.edu)

### **Faïcel Chamroukhi**

*Professor of Statistics and Data Science*

*Head of Data Science and Artificial Intelligence*

*IRT SystemX, France*

✉ [Faïcel.chamroukhi@irt-systemx.fr](mailto:Faïcel.chamroukhi@irt-systemx.fr)

### **Julyan Arbel**

*Associate Researcher*

*Associate Researcher of the Statify team*

*Inria centre at the University Grenoble Alpes, France*

✉ [julyan.arbel@inria.fr](mailto:julyan.arbel@inria.fr)

### **Le Thi Hoai An**

*Full Professor of Exceptional Class*

*Director of Computer science and Applications Department*

*University of Lorraine, France*

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