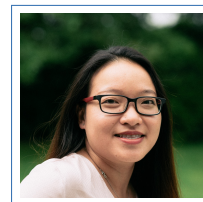


Hong-Phuong DANG

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Research interests

Key words **machine learning, clustering, dictionary learning, matrix factorization, Bayesian non-parametric, stochastic process, Markov chain Monte Carlo, sparse representations, inverse problems, statistical signal processing, interaction between Bayesian methods and optimization, ...**

Academic positions

Since 09/2017 **Assistant Professor (tenure track)**, in *Machine Learning*, ENSAI/CREST.
10/2016 - 08/2017 **ATER-Assistant lecturer**, *Centrale Lille/CRISAL*, team SIGMA.

Education

01/10/2013 - **Doctorat (Ph.D.)**, *Centrale Lille, CRISAL*, under the supervision of M. Pierre Chainais.
01/12/2016

- Subject: "Nonparametric Bayesian approaches and dictionary learning for inverse problems in image processing "
- Reviewers : Florence Forbes et Cédric Févotte
- Jury members : Agnès Desolneux, Stéphane Canu and Jérôme Idier.

2012 - 2013 **Master (M.Sc.)**, *University Rouen*, Computing, Information and System Engineering.
Option: Multimedia Data Processing

2009 - 2013 **Engineering degree (equ. M.Sc.)**, *INSA Rouen*, Information Systems Architectures (Computer Science).
Option: Data Engineering

Teaching Experience

Since 09/2019 **Co-head**, *Data Engineering and Machine Learning program, ENSAI*.

01/09/2017 - now **Assistant Professor**, *ENSAI*, Computer Science Department, ~100h/ans.
Algorithms and Programming, Data Processing Project, Optimization, Supervised Learning, Office Tools, Signal Processing.

01/10/2016 - **ATER**, *Centrale Lille*, **176h**.
31/08/2017 Signal Processing (English and French), Telecommunication, Probability, Electronics.

2014 - 2016 **Teaching Assistant**, *Centrale Lille*, **128h**, Signal Processing.

Supervision

2018 **Master student**, *Ensaï*, 50%, I have co-supervised Loïs Alain and François Le Rest internships (M1) with Myriam Vimond, on Non-parametric models based on stochastic processes and the expectation-maximization algorithm to segment images.

2019 **Master student**, *Ensaï*, 80%, I have co-supervised Lucas Bouju internship (M1) with Elvira Clément, on Online Dictionary Learning using Gibbs sampling.

Administrative activities

2017-Now **Appointed Member**, *School Council*, ENSAI.

2015 - 2017 **Elected Member**, *Laboratory Council*, CRISAL.

04 - 12/2014 **Secretary**, *PhD Association*, Ecole Centrale de Lille.

04 - 12/2014 **Treasurer**, *Association engineering sciences for the promotion of the PhD degree*, Lille.

Languages

Vietnamese Native
French Bilingual
English Fluent

Publications

◦ International journal papers

1. *H-P. Dang*, P. Chainais. Indian Buffet Process Dictionary Learning : algorithms and applications to image processing. **International Journal of Approximate Reasoning**, 83 : 1-20, 2017.
2. *H-P. Dang*, P. Chainais. Towards dictionaries of optimal size : a Bayesian non parametric approach. **Journal of Signal Processing Systems**, 1-12, 2016.

◦ International conference papers

3. *H-P. Dang*, C. Elvira. Parameter-free Small Variance Asymptotics for Dictionary Learning. **Proc. of the 27th European Signal Processing Conference**, 2019.
4. C. Elvira, *H-P. Dang*, P. Chainais. Small variance asymptotics and bayesian nonparametrics for dictionary learning. **Proc. of the 26th European Signal Processing Conference**, 2018.
5. *H-P. Dang*, P. Chainais. Indian Buffet Process Dictionary Learning for image inpainting. **IEEE Workshop on Statistical Signal Processing**, 2016.
6. *H-P. Dang*, P. Chainais. A Bayesian non parametric approach to learn dictionaries with adapted numbers of atoms. **IEEE International Workshop on Machine Learning for Signal Processing**, 1-6, **Intel best paper award**, 2015.

◦ National conference papers

7. *H-P. Dang*, M.Vimond. Segmentation adaptative d'image avec un nombre efficace de classes en utilisant l'algorithme Expectation-Maximisation pour modèle de mélange par processus de Dirichlet tronqué. **Conférence sur l'Apprentissage automatique**, 2019.
8. *H-P. Dang*, C. Elvira, P. Chainais. Vers une méthode d'optimisation non paramétrique pour l'apprentissage de dictionnaire en utilisant Small-Variance Asymptotics pour modèle probabiliste. **Conférence sur l'Apprentissage automatique**, 2018.
9. *H-P. Dang*, P. Chainais. Apprentissage de dictionnaire non paramétrique pour les problèmes inverses en traitement d'image. **Journées de Statistique**, 2018.
10. *H-P. Dang*, P. Chainais. Approche bayésienne non paramétrique dans l'apprentissage du dictionnaire pour adapter le nombre d'atomes. **Conférence nationale Grets**, 2015.

◦ Medical journal papers

11. E. Rault, T. Lacornerie, *H-P. Dang*, F. Crop, E. Lartigau, N. Reynaert, D. Pasquier. Accelerated partial breast irradiation using robotic radiotherapy: a dosimetric comparison with tomotherapy and three-dimensional conformal radiotherapy. **Radiation Oncology**, 11(1), 2, 2016.
12. E. Rault, T. Lacornerie, *H-P. Dang*, E. Lartigau, N. Reynaert, D. Pasquier. EP-1610: Accelerated partial breast irradiation using the CyberKnife: A feasibility study. **Radiotherapy and Oncology**, no 111, S207-S208, 2014.

Funding resources

- 2017 Scientific installation grant (AIS) (10k€), Rennes Métropole
- 2015 Grant for the international mobility (4k€), Collège doctorale Lille Nord de France, Région Nord – Pas de Calais, Central Foundation Initiatives, GdR MIA

Awards

- 2015 Intel Best Paper Award, IEEE Int. Workshop on MLSP

Evaluation and expertise works

Review

- Journal IEEE Signal Processing Letters, IEEE Transactions on Signal Processing.
- Conference IEEE International Workshop on Machine Learning for Signal Processing (MLSP), IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP).

Jury

- 04/06/2018 **Follow-up committee**, Vasile Cazacu.
- 03/06/2019 INRIA Rennes - Bretagne Atlantique / IRISA.