Charlotte Laclau

Associate professor in Computer Science

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Age: 32

Professional appointments

2018–present **Associate professor**, Télécom Saint-Etienne/Hubert Curien Laboratory, Data Intelligence team.
Working on statistical machine learning and data mining
- Fairness in Machine Learning
- Representation learning for complex data
- Unsupervised learning with probabilistic models

2016–2018 **Post-doc. fellow**, Grenoble computer science laboratory, AMA team.
Working on ranking models for recommendation systems with two companies: Kelkoo and Purch

2012 – 2016 **PhD in Computer Science, specialization in Data Science**, *Paris Sorbonne Cité University*, Machine Learning for Data Science (MLDS) team.
- PhD supervisor : Mohamed Nadif
- Subject : Hard and fuzzy block clustering algorithms for high dimensional data
- Grant from University of Ottawa to work at the Imagine Lab (6 months), Canada.

2015 **Visiting PhD student**, *Canadian Grant (Big Data Project)*, University of Ottawa - Imagine Lab, 6 months.

2014 **Visiting PhD student**, *Mobility Grant*, Universidade Federal de Pernambuco - Centro de Informatica, 4 months.

Research activities

Ongoing Projets and Grants

Member of CNRS project Diké, Bias, fairness and ethics of compressed NLP models, Collaboration with University of Lyon 2 (ERIC) and NaverLabs Grenoble.
Total: 500k euros

Member of CNRS project UNDERNEATH, Understanding deep neural networks through game theory , Collaboration with I. Redko.
Total: 150k euros

Member of "AI meets Design" project financed by UJM Foundation, Design of art objects with Generative Adversarial Networks, Collaboration with ACCRA and CIEREC laboratories.
Total: 15k euros

Grant holder within IDEX Lyon/Saint-Etienne, *Impulsion*, Learning Representations for Dynamic Networks.
Total: 70k euros

Student Supervision

Thesis.
- Present - F. Torba : Natural language processing in the context of responding to complex calls for tenders, co-supervised with C. Gravier and AItenders
- Present - M. Choudhary : Fairness for Graph Mining, co-supervised with C. Largeron (50%)
- Present - R. Chevasson : Wasserstein embeddings for language model visualization and document clustering, co-supervised with C. Gravier (50%)
- 2016-2018 - S. Sidana : Recommendation Systems for Online Advertising, co-supervised with M.R. Amini

Postdoc.
- 2020-2021 - J. Tissier : Representation Learning for Dynamic Graphs (100%)

Master's student internships (recents).

- B. Ethève: Automatic Diagnosis of Symptoms of Systemic Sclerosis (SSc)
- N. Vesseron : Deep Neural Networks and Congestion Games
- D. Moorthy : IA for Creativity
- R. Mittakola : Representation Learning for Dynamic PPI networks

Community service

Conferences.

- 2021 : CAP@Saint-Etienne, National Conference on Machine Learning, program and organisation comity
- 2018 : SSFAM@SFDS session, 50èmes Journées de Statistique de la SFDS
- 2017 : CAP@Grenoble, National Conference on Machine Learning, program and organisation comity

Reviewer.

ICML'2020, NeurIPS'2019, IJCAI'2019&2020, ECIR'18, ESANN'17, AIStat'17, SIGIR'17, SFC'16

Other

2018-2020 **Co-head of the ATLAS research group, GdR MADICS.**
On Machine Learning applied to healthcare problems

2018-present **Vice-President of the Société Savante Francophone d'Apprentissage Machine (SSFAM).**

Publications

Selected peer-reviewed conferences

Vesseron N., Redko I., Laclau C., *Deep Neural Networks Are Congestion Games: From Loss Landscape to Wardrop Equilibrium and Beyond*, AISTAT, 2021.

Laclau C., Redko I., Choudhary M., Largeron C., *All of the Fairness for Edge Prediction with Optimal Transport*, AISTAT, 2021.

Redko I. , Laclau C., *On Fair Cost Sharing Games in Machine Learning*, AAAI, 2019.

Sidana S. , Laclau C. et Amini M.-R., *Learning to Recommend Diverse Items over Implicit Feedback on PANDOR*, RecSys, 2018.

Balikas G., Laclau C., Redko I., Amini M.-R., *Cross-lingual Document Retrieval using Regularized Wasserstein Distance*, ECIR, 2018.

Laclau C., Redko I., Matei B., Brault V., Bennani Y., *Co-clustering through Optimal Transport*, ICML, 2017.

Sidana S., Laclau C., Amini M.-R., KASANDR*: a Large Scale Dataset with Implicit Feedback for Recommendation*, SIGIR, 2017.

Journals

A. Burashnikova, M. Clausel, C. Laclau, F. Iutzeler, Y. Maximov, M-R. Amini., *Learning over no-Preferred and Preferred Sequence of items for Robust Recommendation*, Journal of Artificial Intelligence Research, 2021.

S. Sidana, M. Trofimov, O. Horodnytskyi, C. Laclau, Y. Maximov, M-R. Amini, *User preference and embedding learning with implicit feedback for recommender systems*, Data Mining and Knowledge Discovery, pages 1–25, 2021.

Laclau C. and Brault V., *Noise-free Latent Block Model for High Dimensional Data*, Data Mining and Knowledge Discovery, pages 1–25, 2018.

Laclau C. and Nadif M., *Diagonal latent block model for binary data*, Statistics and Computing, pages 1–9, 2016.

Laclau C. and Nadif M., *Hard and fuzzy diagonal co-clustering for document-term partitioning*, Neurocomputing, Vol. 193, pages 133 - 147, 2016.

Pre-print

Choudhary M., Laclau C. and Largeron C., *Variational Node Embeddings for Dyadic Fairness and edge prediction.*

Tissier J., Laclau C., *Learning Node Embeddings in Dynamic Graphs using Time Distance.*

Brault V., Devijver E., Laclau C., *Mixture of Segmentation.*

Invited Talks

2021 **Data Visualisation with Python**, *National Conference in Statistics (SFDS, JDS).*

2018 **Calypso: machine learning for online advertising and recommender systems**.
- Naver Labs, Grenoble
- LIRIS, University of Lyon 1

2017 **Optimal Transport: from unsupervised learning to information retrieval**.
Hubert Curien Laboratory, Saint-Etienne

2017 **Co-clustering through Optimal Transport**.
- Laboratory of computer Science (LIG), Grenoble
- Jean Kutzman Laboratory, Grenoble

2017 **Tutorial on clustering**, *Group of the Young Statistician and Probabilist (YSP), SFDS*, Paris.

2017 **Diagonal Latent Block Model for Binary Data**.
- SAMM (Statistics, Analysis, and multidisciplinary modelisation), Paris 1
- DM2L, LIRIS, Lyon.

2016 **Probabilistic Co-clustering methods**.
AgroParisTech, Paris

2014 **Fast simultaneous clustering and feature selection for binary data**.
- CIn-UFPE, Federal University of Recife, Brazil
- IMAGINE, University of Ottawa, Canada

Teaching Activities

2018 - present **Télécom Saint-Etienne (Engineering school)**.
- Introduction to programming and algorithmic
- Introduction to Machine Learning
- Javascript for web application (frond and backend)
- Cloud Computing with AWS
- Big Data Projet (final year)

2020 **Machine learning and Data Mining Master's program**, *University Jean Monnet.*
Lecture on Data for Machine Learning

2017 **Tools for Data Science - Doctoral school**, Grenoble University.
Development of a doctoral training course for PhD students from various domains wishing to learn the basics of data analysis and machine learning.

2017–2018 **Ensimag (Engineering School)**, , Grenoble.
Data Analysis and multidimensional statistics.

2015–2016 **IUT de Paris Descartes (assistant professor)**.
Advanced Databases, Web programming, Programmation with R

2012–2015 **IUT de Paris Descartes (PhD Students)**.
Introduction to statistics, Introduction to Databases, Visualisation with Tableau.