

Sothea Has

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EDUCATION

- France** **Sorbonne University Pierre and Marie Curie - Paris 6**
2018 - Present **Ph.D student of Statistical Learning under supervision of Mathilde Mougeot and Aurélie Fischer**
Research topic *Consensual aggregation and distance measurements for statistical learning. Theoretical contributions and applications to the field of energy.*
 🔗 Combining of supervised & unsupervised machine learning methods for predictions.
 🔗 Kernel-based consensual aggregation of several predictors for predictions.
 🔗 Consensual aggregation of random projected high-dimensional features.
- France** **University Paris Diderot - Paris 7**
2017 - 2018 **Master 2 Random Modelling and Data Science (M2MO)**
Project Data Science for Company, Massive Data Processing (R-programming).
Exam Statistical Learning, Statistical Modeling, Diffusion Statistics, Stochastic Calculus.
Both Machine Learning (Python), Monte Carlo Method (C++).
- France** **École Nationale Supérieure d'Informatique pour l'Industrie et l'Enterprise - ENSIE**
2016 - 2017 **Master 1 Applied Mathematics**
Project Time Series, Simulation Methods, Research Project in Finance, Machine Learning.
Exam Stochastic Process, Operation Research, Stochastic Calculus in Finance.
Both Data Analysis, Numerical Methods for PDE, C++.
- Cambodia** **Royal University of Phnom Penh - RUPP**
2014 - 2015 **Master 1 of Mathematics**
2009 - 2013 **Bachelor's Degree of Mathematics**

PUBLICATIONS

- April 2021 🔗 **KFC: A clusterwise supervised learning procedure based on aggregation of distances.**
Published in Journal of Statistical Computation and Simulation, with Aurélie Fischer and Mathilde Mougeot.
- 2021 🔗 **Comparison of Various Machine Learning Methods Applied to the Global Modeling of Event-Driven Pitch Angle Diffusion Coefficients During Geomagnetic Storms.**
Research topic *Coupled Feedback Mechanisms in the Magnetosphere-Ionosphere System, abstract accepted in Frontiers, with G. Kluth, J.F. Ripoll, A. Fischer, M. Mougeot, and E. Camporeale.*
- 2021 🔗 **A kernel-based consensual aggregation for regression.**
Submitted and is under review.
- 2021 🔗 **A consensual aggregation of random projected high-dimensional features of predictions for regression.**
To be submitted.

EXPERIENCES

2018 - Present **LPSM (UMR 8001) and UFR Mathematics Université de Paris**

Ph.D research, teaching mission and ATER:

- 🔗 Practical class of Data Analysis with R and R-studio, M1ISIFAR.
- 🔗 Practical class of Data Mining with R and R-studio, M2ISIFAR.
- 🔗 Practical class of Exploratory Data Analysis with R and R-studio, EDA.
- 🔗 Practical class of Algorithm and Programming with Python, L3 MIASHS.
- 🔗 Tutorial class of Statistical Modeling - M2MO.

2018 **LPSM (UMR 8001) Université de Paris**

April - Sep **M2 internship: Predictive Models based on Clustering with Bregman divergences and Local Predictions**

Analysis of sensitivity of K-means clustering with Bregman divergences on several types of datasets. Construction of predictive models in two steps: clustering and local predictive models. Numerical experiments carry out on several synthetic data are also provided to illustrate the performance of the proposed two-step procedure.

2017 **Laboratory of TELECOM SudParis**

June - Sep **M1 internship: Optimization Problem with Simulated Annealing Algorithm**

Understanding the convergence of simulated annealing algorithm which is a probabilistic method aiming at estimating the global optimizer of a given function (deterministic or not). The algorithm constructs a sequence of Markov chains to explore the state space of solution, and gradually fall into the neighborhood of the global optimizer with high probability. Two unbiased estimators of "rejection ratio" which is the key quantity of the method, in the case of noisy cost function, are proposed. The performance of the method are also illustrated through several numerical simulations.

SCHOLARSHIP & AWARDS

LPSM Scholarship

2018 - Present Ph.D and research funds.

ENSIIE Scholarship

2017 - 2018 Second year of master's degree.

Erasmus+ Scholarship

2016 - 2017 First year of master's degree.

LANGUAGES & PROGRAMMING

Languages Khmer (Mother tongue), English (fluent), French (conversational)
Programming R, Matlab, Scilab, Python, C++, \LaTeX .

PERSONAL INTEREST

Reading Behavioral science, self-discipline and new discoveries.
Sports Volleyball, basketball and football.
Other interests Music, guitar, a little bit piano and drum, drawing.