

Sibo Cheng

Ph.D, Data Assimilation, Applied
Mathematics

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I am currently preparing my PhD at Electricité de France R&D in collaboration with LIMSI laboratory of Université Paris saclay. I am working on field reconstruction/prediction using advanced data assimilation/statistical inference methods with applications in energetics, and I am also interested in a large range of problematics in Applied Mathematics and Machine Learning.

Education

- 2017–2020 **Paris-Saclay University**, Ph.D., Data Assimilation, Optimization, *in collaboration with EDF R&D.*
- 2015–2017 **Université Catholique de Louvain**, M.Sc. **TIME** (Top Industry Manager for Europe) program., Applied mathematics, *Optimization, Stochastic Process, Financial Mathematics.*
- 2013–2017 **École Centrale de Nantes**, Engineer's degree, Applied mathematics and Engineering, including a double-degree Master with Université Catholique de Louvain in Belgium.
- 2011–2013 **Lycée Pierre de Fermat**, *Classes préparatoires*, Post-high school studies leading up to competitive nationwide entrance examinations to the Top Elite College **Grandes Ecoles**, Mathematics, Physics and Computer Science.
- 2008–2011 **High School Affiliated to FUDAN University**, Shanghai.

Experience

- 2017–present **R&D engineer**, PhD student at **EDF Lab** Saclay, *Improvement of Background Covariance matrix Computing in Data Assimilation Methods for Field Reconstruction/Prediction.*
- 2017.7–9 **Deep Learning Intern, Nokia bell Lab**, Antwerp, *Applying machine learning methods to DSL connection diagnostic using Tensorflow package in Python.*
- 2016.7–8 **Data Mining Intern, Tricount**, Brussels, *Data mining on huge client data. I worked on clustering and classification for backup user data using R programming.*
- 2015.4–8 **Research Engineer Intern, EDF Lab** Clamart, *Evaluation of the reliability of hybrid dynamical systems for a steam generator using stochastic modelling.*

Journal publications

- S.Cheng, J-P.Argaud, I.Bertrand, D.Lucor, A.Ponçot**, *Background Error Covariance Iterative Updating with Invariant Observation Measures for Data Assimilation*, *Stochastic Environmental Research and Risk Assessment*, (in press), **see publication.**
- M.Gueuning, S.Cheng, R.Lambiotte, J-C.Delvenne**, *Rock–paper–scissors dynamics from random walks on temporal multiplex networks*, *Journal of Complex Networks*, cnz027, (August, 2019), **see publication.**
- S.Cheng, A.Laurent, P.Van Dooren**, *Role model detection using low rank similarity matrix*, *scientific report*, **see publication.**

Working papers

- S.Cheng, J-P.Argaud, I.Bertrand, D.Lucor, A.Ponçot**, *A graph clustering approach to localization for adaptive data assimilation based on state-observation mapping*, (in preparation).

Courses

PhD.

Optimization, Data Assimilation , Uncertainty Propagation, Machine Learning, Predictive Data Analysis, Time Series

M.Sc & Engineer.

Stochastic Process, Insurance Mathematics, Numerical Analysis, Graph Theory, Data Mining (clustering, prediction etc), Fluid Mechanics, Material and Structural Mechanics, Game Theory

Computer Skills

Proficiency in Microsoft Office (Word, Excel, PowerPoint), Adobe, Latex, Linux

Programming: MATLAB, Python, R

Language Skills

Chinese, native.

French, fluent.

English, fluent (TOEIC: 900).

German, beginner.

Self Review and Hobbies

Specialized in applied mathematics, especially interested in data science and financial modelling. Strong analytical and problem solving abilities. Energetic personality with multicultural and good communication skills. Ability to learn fast, work efficiently in a team and handle multiple tasks. Like sports, travelling, and cultures of different countries.