







Fei GAO


DATA SCIENCE PROFESSOR & RESEARCHER

 fei.gao@ehesp.fr

 (+33) 06.61.21.39.81

 Rennes, France
French

 linkedin.com/in/
fei-gao-3098a9156

 Nationality: French

TECHNICAL SKILLS

Programming (Python, R, SAS, SQL, Scala and Java)

Unstructured Data (NLP, BERT)

Machine Learning & Deep Learning mathematical algorithms

Big Data Processing Frameworks (Spark)

Data visualization (Dash & Shiny)

EDUCATION

DATA SCIENTIST
ENSAE formation continue Le Cepe, Paris, 2021

PHD (continuous training)
Université de Rennes 1, 2017

IT ENGINEER
Institut National des Sciences Appliquées INSA, Rennes, 2009

BUSINESS ENGINEER
Rennes School of Business, 2009

SUMMARY

- Data science professor and researcher with extensive knowledge and skills in machine learning, programming, statistical analysis, math modeling and big data processing.
- 13 years of hands-on experience with healthcare big data
- Passionate problem solver and fast learner (PHD through continuous training)
- Trusted partner, proactive suggestion maker and team player
- Chinese/French native speaker, fluent in English (TOEIC 885)

PROFESSIONAL EXPERIENCE

DATA SCIENCE PROFESSOR & RESEARCHER Since February 2019
Ecole des hautes études en santé publique (EHESP), Rennes

- Head of the “health data science” establishment diploma (Processing large data sets, Statistical analysis and computing with Python/R/SAS/SQL, Machine Learning and Deep Learning, Data Visualization)
- Provide actionable, strategic recommendations using big data processing and machine learning techniques to improve efficiency of hospitals’ Information Systems and patient pathway. E.g.:
 - Development of emergency department triage decision support system (NLP & Machine Learning);
 - Patient pathway prediction and identification of the critical components (Machine Learning & model agnostic methods);
 - European Union Health Programmes research project “OASES”: medical deserts detection (big data algorithms analytics and implementations).
- PhD supervisor

DATA SCIENCE PROFESSOR Since March 2021
ENSAE formation continue Le Cepe

- Conception and realization of various data science courses
 - Data science certificate training program
 - Programming languages (Python, R, SAS, SQL and scala)
 - Pipeline machine learning (Python & R)
 - Natural Language Processing and Bidirectional Encoder Representations from Transformers (BERT)
 - Spark

HEALTH DATA EXPERT Since April 2018
Assurance Maladie & Agence technique de l'information sur l'hospitalisation

COMPUTER ENGINEER / SENIOR DATA ANALYST July 2009 – Jan 2019
Ecole des hautes études en santé publique (EHESP), Rennes

- Managing projects through ideation, data gathering, data wrangling, analysis, modeling and communication. E.g.:
 - Patient transfers behavioral analysis;
 - Development and prototyping of recommender systems for patient path.
- MySQL DBA

SKILLS

Process Improvement
 Project Planning
 Improving Efficiency
 Reducing Costs
 Risk Assessment
 Resource Management
 Leadership
 Adaptability
 Effective communication & Know-how transfer
 Synthesis capacity

HOBBY

Classical dance since the age of 6

VOLUNTEER EXPERIENCE

Coaching Zumba fitness instructor
 FIEVRA Rennes
 Since 2010

EXPERTISE

- Representative of ehesp in the health data hub
- SNDS and health data science expert for the evaluation of funding applications for research projects such as institute for public health research
- participation in working groups at national level

SCIENTIFIC PUBLICATIONS

Gao F, Boukebous B, Mario P, Enora A, Batourou S, & Bayat-Makoei S. (2022). Predictive Models for Emergency Department Triage using Machine Learning: A Systematic Review. *Obstetrics and Gynecology Research*, 5(2), 136-157. DOI: 10.26502/ogr085.

Gao F, Boukebous B, Mario P, Enora A, Batourou S, & Bayat-Makoei S. (2022). Predictive Models for Emergency Department Triage using Machine Learning: A Review. *Obstetrics and Gynecology Research*, 5, 107-121. DOI: 10.26502/ogr082.

Gao F, Languille C, Karzazi K, Guhl M, Boukebous B, Deguen S. Efficiency of fine scale and spatial regression in modelling associations between healthcare service spatial accessibility and their utilization. *Int J Health Geogr*. 2021 May 19;20(1):22. doi: 10.1186/s12942-021-00276-y. PMID: 34011390; PMCID: PMC8136234.

Gao F, Jaffrelot M, Deguen S. Measuring hospital spatial accessibility using the enhanced two-step floating catchment area method to assess the impact of spatial accessibility to hospital and non-hospital care on the length of hospital stay. *BMC Health Serv Res*. 2021 Oct 11;21(1):1078. doi: 10.1186/s12913-021-07046-3. PMID: 34635117; PMCID: PMC8507246.

Gao F, Kihal W, Le Meur N, Souris M, Deguen S. Does the edge effect impact on the measure of spatial accessibility to healthcare providers? *International Journal of Health Geographics*. 2017; 16: 46. DOI: 10.1186/s12942-017-0119-3.

Gao F, Kihal W, Le Meur N, Souris M, Deguen S. Assessment of the spatial accessibility to health professionals at French census block level. *Int J Equity Health*. 2016;15(1):125.

Adoli L., Raffray M., Châtelet V., Vigneau C., Lobbedez T., Gao F., Bayer F., Campéon A., Vabret E., Laude L., Jais J.P., Daugas E., Couchoud C., Bayat S. (2022). Women's Access to Kidney Transplantation in France: A Mixed Methods Research Protocol. *International Journal of Environmental Research and Public Health*. 19(20):13524. doi: <https://doi.org/10.3390/ijerph192013524>. Réf. HAL: hal-03827461

Baptiste Boukebous, Cédric Maillot, Angèle Neouze, Hélène Esnault, Fei Gao, et al.. Excess mortality after hip fracture during COVID-19 pandemic: More about disruption, less about virulence-Lesson from a trauma center. *PLoS ONE*, Public Library of Science.

Grimaud O, Lachkhem Y, Gao F, et al. Stroke Incidence and Case Fatality According to Rural or Urban Residence: Results From the French Brest Stroke Registry. *Stroke*. 2019;50(10):2661-2667. doi:10.1161/STROKEAHA.118.024695

Peyronnet B, Gao F, Brochard C, et al. Urologic Disorders are Still the Leading Cause of In-hospital Death in Patients With Spina Bifida. *Urology*. 2020;137:200–204. doi:10.1016/j.urology.2019.11.006.

Aid Mellouk K, Soulaymani A, Gao F, Astagneau P, Misset B. Infectious complications of endoarterial interventional radiology: protocol for an observational study of a longitudinal national cohort of patients assessed in the French hospital discharge database (MOEVA study). *BMJ Open*. 2019 Jun 3;9(6):e024181. doi: 10.1136/bmjopen-2018-024181. PMID: 31164361; PMCID: PMC6561437.

Istvan M, Lecoffre C, Bayat S, Béjot Y, Le Strat Y, De Peretti C, Gao F, Olié V, Grimaud O. What is the evolution of stroke unit's accessibility in metropolitan France from 2009 to 2014? A trend analysis of over 600 000 patients using national hospital databases. *BMJ Open*. 2018 Sep 28;8(9):e023599. doi: 10.1136/bmjopen-2018-023599.

Le Meur N, Ferrat L, Gao F, Quidu F, Louazel M. Maillage territorial des établissements de santé: apport des modèles issus de la théorie des graphes. *Journal de Gestion et d'Économie Médicale*. Décembre 2017.