WILLIAM FAURIAT

Senior Data Scientist building models for production

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Professional Summary

10+ years in Statistics and Data Science for industrial applications and scientific computing. Senior researcher in Uncertainty Quantification leveraging stochastic modeling and statistical learning for decision-making. Current focus: turning research into production APIs and full-stack ML applications.

Experience

Senior Data Scientist 2021–present
CEA (French Atomic Energy Commission)
- Fine-tuned inversion algorithms for high-power tomography
- Designed data processing APIs and visualization tools for model calibration
- Led Bayesian Optimization of experimental conditions for Inertial Confinement Fusion
- Leading training on Uncertainty Quantification (20+ persons)

Post-Doctoral Researcher 2018–2020
CentraleSupélec (French Grande École)
- Research on optimal information collection for decision under uncertainty
- Published Value of Information framework for maintenance optimization
- Bayesian decision theory applied to conditional maintenance scheduling
- 100+ hours courses on reliability and industrial engineering

Gap Year — *Travelling* 2017

Consultant 2016
ALTEN for PSA (now Stellantis — automotive manufacturer)
Product development engineer working on design and validation of suspension system architecture

PhD Researcher 2013–2016
Renault (automotive manufacturer)
- Stochastic modeling of road-induced fatigue loads on suspension systems
- Published road profile identification method using Kalman filtering

Education

PhD, Mechanical & Industrial Engineering 2016
Université Clermont Auvergne ***Dissertation:*** "Stochastic modeling of road-induced fatigue loads on suspension systems"

Engineering degree (Master's level) 2012
IFMA (French Grande École)

Full-Stack Engineer Certification 2024
Codecademy 150+ hours online courses, projects & exams: React, Node.js, Express, REST APIs, SQL, Git, CI/CD

Skills

Core Competencies
- Bayesian Inference
- Uncertainty Quantification
- Machine Learning
- Statistical Decision Theory
- Full-Stack Development
- API Design
- AI-enhanced Development
- Scientific Computing

Tech Stack
- **Languages:** Python (expert), JavaScript (proficient), SQL
- **Backend:** Flask, FastAPI, NumPy, SciPy, scikit-learn
- **Frontend:** React, HTML/CSS, PyQt5
- **Tools:** Git, Docker, Linux

Selected Publications

[1] Fauriat, W. & Zio, E. (2020). Optimization of an aperiodic sequential inspection and condition-based maintenance policy driven by value of information. *Reliability Engineering & System Safety*, 204, 107133.
[2] Fauriat, W., Mattrand, C., Gayton, N., Beakou, A., & Cembrzynski, T. (2016). Estimation of road profile variability from measured vehicle responses. *Vehicle System Dynamics*, 54(5), 585-605.
[3] Fauriat, W. & Gayton, N. (2014). AK-SYS: An adaptation of the AK-MCS method for system reliability. *Reliability Engineering & System Safety*, 123, 137-144.

Selected Projects

Bayesian Inference Web App: Production-deployed full-stack application for interactive Bayesian inference. NumPy-only inference engine, Flask backend, React frontend. *Tech:* Python, NumPy, Flask, React, scikit-learn | bi-webapp.onrender.com
UQ Initiation App: Standalone desktop tool for learning uncertainty quantification through interactive simulations. *Tech:* Python, PyQt5