Mohamed Hadj

MSc in Complex Systems Engineering oriented towards IT development

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EDUCATION

- **ENSTA Paris | Polytechnic Institute of Paris, MSc in Complex Systems Engineering**   *2021-2024*
  Engineering Degree   Palaiseau, France
  - Top Tier Graduate schools of engineering in France.
  - IT : Database / Programming & Algorithmic optimization / Different projects in Python, SQL, C, Fortran and Matlab
  - Mathematics: Statistical modelling, estimators, differentiable nonlinear optimisation, numerical algorithms for quadratic optimisation problems
  - Industrial Economics and Innovation: The inter dependencies between the market environment, Competitive Structures, Firm Strategies and Performances. / Financial and strategic business analysis
  - 3.7 out of 4 average GPA

- **CPGE Lycée Saint-Louis**   *2019-2021*
  Classes préparatoires   Paris, France
  - Undergraduate intensive two-year study course preparing for the competitive entrance examinations to the French 'Grandes Écoles' (the top French and highly-selective institutions) with intensive courses in mathematics, physics, chemistry and IT

EXPERIENCE

- **Data engineer in Safety Flight Department | ArianeGroup**   *September 2022 - September 2024*
  Apprenticeship (alternation between 3 weeks at school and 5 weeks in company)   Paris, France
  * Developed a digital tool with Python based on large amount of experimental data able to predict launchers explosions consequences. Data manipulated with JSON. Decision Tree to write automatically reports. Tool raised productivity up to 50%. Introduced to the whole flight department.
  * Tool developed under the supervision of a senior developer in the CI/CD process. Wrote clear and complete documentation for users.
  * Assessed and predicted fallout zones of launcher fragments in explosions, Monte Carlo simulations.
  * Led explosion studies for customers, Simulations of explosions in different conditions, publishing interpretation results and explaining calculations to international customers.

- **Software development for Centre for Propulsion Engineering | Cranfield University**   *June - August 2022*
  Research internship   England
  * Code improvement to evaluate the performance of a compressor
  * Optimisation of Python source code
  * Implementation of sub-idle loss models into an in-house low-order method

PROJECTS (LATEST)

- **Chatbot for Portfolio**   *September 2024*
  On Free Time
  * Data augmentation. Training generative model(RoBERTa) on personal data. Model fine-tuning.
  * Integration to the portfolio through Django

- **Voluntary Project**   *June 2024 -*
  On free time
  * Project of training a predictive model for high school students to help them choose the educational path that best matches their interests.
  * Machine Learning Algorithms, Bayesian Models, Predictive Analytics

TECHNICAL SKILLS

- **Programming**: Python (Pandas, JSON, Numpy), GitLab/GitHub, Data structures & Algorithms, Databases (SQL, Chroma), C/C++, Matlab/Simulink

- **Softwares skills**: Excel, Powerpoint, Word

- **Languages Spoken**: French : Mother Tongue, English : advanced level (C1 Linguaskill), Arabic (Dual Tunisian nationality)

MISCELLANEOUS

- **Volunteer at Hopital Robert Debré, Paris**, Helping disabled children during weekends and organisation of activities

- **Interests**, New technologies, Programming, Soccer, Automobile, Motor sports

- **Main skills**, Communication, Ability to collaborate and analyse, Problem-solving, Organisation

For further information, I remain available for a phone or video call: hadj.tmohamed@gmail.com