BILAL AL TAKI

Scientific Project Manager | AI, Simulation & Applied Mathematics

22 March 1991   French and Lebanese   Paris, France

bilal.altaki.math@gmail.com   +33 7 85 68 63 09   GitHub Profile   linkedin.com/in/altaki/   French CV

SUMMARY

Technical and scientific leader with 10+ years of experience at the intersection of academic research and industrial innovation. PhD in Applied Mathematics with a focus on environmental modeling (e.g., tsunamis, snow avalanches), combining theoretical and practical approaches. I developed applied expertise in AI and data science, supported by targeted training and hands-on industrial projects. At Capgemini Engineering, I led a multidisciplinary engineering project, including development of innovative assets for offshore data centers. With international academic and industrial experience, I thrive in roles blending scientific rigor, technical leadership, and strategic vision.

EXPERIENCE

4/2023 – Present   **Project Manager**   **Capgemini Engineering, Paris**
- Led a multidisciplinary team of 15 experts in a comprehensive feasibility study for a floating data center. Delivered a robust proof-of-concept, now used as a reference by internal stakeholders and selected among the top 6 projects for the *Grand Prix National de l'Ingénierie 2025*.
- Directed the technical development of innovative design and maintenance strategies for offshore deployment. Conducted advanced hydrodynamic stability simulations using ANSYS and OpenFOAM, ensuring full compliance with marine engineering standards.
- Oversaw thermodynamic modeling to design a hybrid air–seawater cooling system. Developed Python-based simulations demonstrating a 30% reduction in energy consumption and a 20% cut in carbon footprint compared to conventional systems.
- Built a digital twin to simulate renewable energy integration, enabling predictive maintenance and reducing operational costs by 20%.
- Led risk analysis and requirements engineering, ensuring 100% alignment with regulatory frameworks and minimizing project delays.

8/2022 – 3/2023   **Researcher**   **TU Kaiserslautern**
- Conducted advanced theoretical research on complex fluid flows with applications in biomedical (e.g., drug transport in blood tissue) and geophysical systems. Leveraged cutting-edge mathematical modeling to produce novel insights, culminating in a peer-reviewed publication in a top-tier journal with 10+ citations, significantly advancing the understanding of environmental and biological fluid dynamics (Publication).

9/2021 – 8/2022   **Research and Teaching Fellow**   **Sorbonne University, Paris**
- Contributed to 2+ ANR-funded research projects, helping secure €200K+ in funding and advancing innovation in applied mathematics. Supervised 1 PhD student and 2+ interns, resulting in 2 peer-reviewed publications and measurable progress in early-stage research initiatives.

10/2019 – 8/2021   **Postdoctroal Researcher**   **Peking University, Beijing**
- Collaborated with a team of 3+ numerical simulation specialists to develop a mathematical model of avalanche phenomena. Conducted theoretical analysis on solution existence and validated results through Python-based simulations, improving model accuracy and contributing to a broader understanding of geophysical risk prediction.

9/2017 - 12/2019   **Research and Teaching Fellow**   **INRIA & Sorbonne University, Paris**
- Improved the theoretical shoreline model by advancing well-posedness results for the lake equation, extending applicability to cases with vanishing bathymetry. This advancement led to a 25% improvement in coastal risk prediction models, enhancing accuracy in environmental hazard simulations. (Publication)

EDUCATION

10/2013 -12/2016   **PhD in applied mathematics**   **Lebanese University & Grenoble-Alpes University**
Thesis: *On some heterogeneous models in fluid mechanics*, with applications to environmental phenomena such as tsunamis and snow avalanches. Joint doctoral program between Lebanon and France.

PROJECTS

3/2022- 3/2022   **Car's generation detection**   (, 2022)
Developed a classification model to predict car generation (I or II) based on feature sets. Applied data preprocessing and feature engineering techniques, and evaluated model performance using accuracy and confusion matrix.

5/2024 - 6/2024   **Prediction answers of individues for a survey**   (, 2024)
Built a Random Forest Regression model to predict responses for 300 individuals based on a dataset of 150 respondents. Maintained demographic quotas and analyzed the impact of brand relationships on product usage patterns.

SKILLS & EXPERTISE

- **Leadership & Mentorship:** 4 interns (3 projects, 2 publications), 3 student teams (90% top grades), 15-person team management.
- **Technical:** Optimization, mathematical modeling; Industrial R&D projects, Applied Statistics.
- **Tools:** Python, Ansys, OpenFOAM, Git.
- **Strengths:** Project management, adaptability, scientific communication.

CERTIFICATIONS

Agile Scrum Foundation   Machine Learning Specialization   Google Project Management

LANGUAGES

English: Professional   **French:** Professional   **Arabic:** Professional