CV

Zakaria **OTMANE**

Engineering-Mathematics Student

INSA Rennes: Department of Applied Mathematics

CONTACT INFORMATION

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EXPERTISE

- Development of mathematical models
- Development of numerical schemes

LANGUAGES

- French: Native language
- English: B2
- Spanish: B1

PROFILE

I am a 5th-year student in Applied Mathematics at INSA Rennes and in Fundamental Mathematics at Université de Rennes (M1). Passionate about mathematics and its vast scope, I am seeking an internship or project opportunity where I can apply my skills in problem-solving, data analysis, and mathematical modeling.

PERSONAL QUALITIES

- Rigour, methodical approach, and attention to detail
- Reactivity and quick thinking
- Punctuality
- Constant search for efficient solutions
- Ability to work effectively in a team and collaborate

ACADEMIC BACKGROUND

- Scientific Baccalaureate

  -Lycée Dupuy de Lôme, Lorient, 2018-2021

  -Specializations: Mathematics and Physics-Chemistry
- Preparatory Classes MPSI-MP

  -Lycée Dupuy de Lôme, Lorient, 2021-2023
- Applied Mathematics

  -INSA Rennes, 2023-present

  -Research introduction program in mathematics with INSA Rennes
- Fundamental Mathematics

  -Université de Rennes, 2025-present

ACADEMIC PROJECTS

- Optimal Transport

  -Generation of animated images using the Sinkhorn algorithm to solve entropically regularized optimal transport problems during a 4th-year internship.

- Complex Analysis

  -Writing two 4th-year theses: one on the fundamental properties of the Riemann zeta function and another on holomorphic ODEs.

- Partial Differential Equations

  -Group Research Project in MP on crowd movement modeling using fluid dynamics

TECHNICAL SKILLS

- Mathematical Modeling and Analysis

  - Differential/Integral Calculus

    -Ordinary Differential Equations
    -Partial Differential Equations
    -Integral Transforms

  - Statistics/Stochastic Processes

    -Inferential Statistics
    -Stochastic Modeling of Dynamic Systems
    -Time Series
    -Data Analysis
    -Statistical Modeling of Risk and Scoring
    -Statistical Learning

  - Optimization

    -Discrete and Continuous Optimization
    -High-Dimensional Optimization
    -Non-Differentiable Optimization
    -Operations Research

- Programming and Numerical Methods

  - Software

    -Python, Matlab, C/C++, R, and Julia

  - Computer Science

    -High-Performance Computing
    -Relational Algebra

  - Numerical Methods

    -Numerical Methods for Linear Systems
    -Numerical Methods for Nonlinear Systems

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