

CV

CONTACT INFORMATION

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EXPERTISE

- Development of mathematical models
- Development of numerical schemes

LANGUAGES

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

Zakaria OTMANE

Engineering-Mathematics Student

INSA Rennes: Department of Applied Mathematics

PROFILE

I am a 5th-year student in Applied Mathematics at INSA Rennes and in Fundamental Mathematics at Université de Rennes (MI). 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