Léo Théodon

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LinkedIn
Orcid
GitHub

Passionate about scientific innovation and emerging technologies, I combine multidisciplinary skills in engineering, image processing, and Machine Learning to develop original solutions aimed at performance and technical excellence.

Professional Experience

OCTOBER 2024 – PRESENT
Research Engineer / Mines Saint-Etienne, Saint-Etienne
udd@Orano Project: "Open Innovation for Industry 4.0" in partnership with Orano.
Developed Deep Learning models (Yolov11, U-net) for automatic image and video stream processing under highly degraded and variable conditions (Blender, Python).

OCTOBER 2021 – SEPTEMBER 2024
PhD Candidate – Applied Mathematics / Mines Saint-Etienne, Saint-Etienne
« Morphometric Characterization of Particle Aggregates through Image Analysis and Stochastic Geometry. »
Scientific partner : **LGC Toulouse**.
Industrial partner : **ARKEMA**.
  - Developed models for simulating aggregate populations (**MATLAB**, **Python**).
  - Applied **Deep Learning** (Mask R-CNN, Yolo-v8) for automated image analysis.
  - Utilized **generative AI** (GAN) to design a digital twin.
  - Achieved **4 peer-reviewed publications**, including 3 Q1 journals.
  - Presented at **3 international conferences** with proceedings.
  - Delivered over **450 hours of teaching** (signal processing, advanced image processing, research & industrial projects, AI tool development, and bot creation).

JANUARY 2018 – PRESENT
Freelance Consultant / France
Provided **IT development consulting** for ERABLE.SYS and Vinci Construction France.
  - Specialized in Revit, IFC format, and BIM (Building Information Modeling) development.
  - Developed a **Python** Revit plug-in for building geometry analysis to optimize rotation planning.
  - Designed a tool for **visualizing** and **analyzing** 3D building geometry from IFC files.

01/09/2013 – 31/08/2018
Mathematics Teacher / French National Education
Secondary school mathematics teacher (middle and high school).
  - **Certified** in **CLIL** (Content and Language Integrated Learning) to teach in English.

Education

SEPTEMBER 2021- OCTOBER 2024
PhD – Applied Mathematics / Mines Saint-Etienne, Saint-Etienne
Morphometric characterization of aggregates through image analysis.

SEPTEMBER 2021
Ingénieur Civil des Mines / Mines Saint-Etienne, Saint-Etienne
Ingénieur Civil des Mines de Saint-Etienne. **GPA: 4.1 – TOEIC: 945**
Generalist skills in Computer Science, IoT, Statistics, Fluid Mechanics, and Image Analysis.

SEPTEMBRE 2021
MSc – Math. Imaging and Spatial Pattern Analysis / Mines Saint-Etienne, Saint-Etienne
« Master Mathematical Imaging and Spatial Pattern Analysis, Optics, Image, Vision, Multimedia »
Major de promotion.
Specialized in image analysis and pattern recognition, with advanced techniques in image processing and color analysis.
  - **CEA Marcoule**: Worked on two-phase flow; resulted in **1 peer-reviewed publication**.
  - **CEA Grenoble**: Focused on SOFC; resulted in **1 peer-reviewed Q1 publication** and **1 international conference presentation**.