Ibrahim EL Kassimi

M.S. Electrical Engineering & Applied Maths.

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OBJECTIVE

Seeking a summer research internship from mid-May through the end of August to apply my skills in optimization and numerical modeling to challenging problems in image processing. Currently engaged in a research project focused on algorithmic optimization for image vectorization, aiming to efficiently represent complex images with a minimal set of geometric primitives.

EDUCATION

- **Master 1 in Electrical Engineering - M1 E3A – ENS Paris-Saclay** Sep2025-Aug2026

  Key Coursework

  Image processing | Graph theory | Markov decision process | Probability theory | Optimization | Optimal policy SARSA | Q-Learning | Neural Networks & Deep Learning |Industrial computing | Control systems | Industrial computing and microprocessing
- **Bachelor's Degree : Année SAPHIRE - ENS Paris-Saclay** Sep2024-Aug2025

  Key Coursework

  Optimisation | Probability theory | Differential equations | Digital electronics | Power electronics | Control systems

PUBLICATIONS

[1] Ibrahim EL KASSIMI et al. "Réalisation d'un dirigeable autonome - CultureSciences de l'Ingénieur". In La Revue 3EI 117 (2025).

RESEARCH & WORK EXPERIENCE

- **Computational Imaging & Optimization - Laboratoire SATIE** Oct2025-Present
  - Researching and implementing optimization algorithms (e.g., genetic algorithms, ML-based) for vectorizing images into geometric primitives
  - Conducting performance analysis and benchmarking of different methods to enhance the convergence speed and quality of artistic image simplification.

- **Automation & Data Processing Developer – Kimialys (Biosensing Startup)** Feb2025-May2025

  Collaborated with the fast-growing R&D team at Kimialys to integrate automation scripts with experimental protocols, promoting faster iteration, testing, and innovation.
  - Reduced average data processing time from 2 days to 5 minutes.
  - Developed a Python-based automation tool for data cleaning, structuring, and analysis, streamlining experimental workflows.

PROJECTS

- **Self-driven Airship** Sep2024-Jun2025
  Contributed to a team project focused on building an autonomous navigation system using embedded systems and integrated camera modules for image acquisition and feedback control.
  - Conducted experiments comparing sensor performance under different conditions.
  - Sensors integration
    * Raspberry Pi Camera 3 Wide : for visual navigation and image processing tasks, including path following.
    * BNO055 IMU : for orientation and stabilization, implementing sensor fusion for accurate attitude estimation.
    * TF-Luna LiDAR : for altitude measurement.

SKILLS & INTERESTS

- **Languages** : English(C1, IELTS), French(Fluent), Arabic(Native).
- **Programming Languages** : C, Python, Matlab, VHDL,LATEX, bash.
- **Frameworks** : OpenCV, PyTorch, TensorFlow, Pandas, Numpy, PyQt5.