Amadou Siaka SANGARE

amadousangare21@gmail.com | linkedin.com/in/amadou-siaka-sangare | amadoussangare.com

EDUCATION

- **Télécom Paris** — Palaiseau, France
  Master of Science in Engineering — *2021 - 2025*
  One of France's top prestigious general engineering schools in the Grandes Ecoles system. Equivalent to a top-tier university specializing in engineering studies
  Courses: *Signal processing, time series, statistics, machine learning, deep learning, reinforcement learning, optimization, advanced algorithms, games theory, economy*
  GPA: *3.93*

- **Université Paris-Saclay** — Orsay, France
  Licence Double Diplômes Informatique, Mathématiques — *2020 - 2021*
  Dual degree in computer science and mathematics, third year of bachelor's degree, intensive bi-disciplinary program
  Courses: *Differential calculus, probability, statistical inference, compilation, machine learning, numerical modeling and simulations with Python, matrix algebra with computation*
  GPA: *4.0*

- **Université Grenoble Alpes** — Valence, France
  Licence Mathématiques et Informatique — *2018 - 2020*
  First and second year of a bachelor's degree in mathematics and computer science.
  Courses: *Linear algebra, calculus, topology, probability, algorithms, object-oriented programming, functional programming*
  GPA: *4.0*

ACHIEVEMENTS & HONORS

- **Oral presentation of a paper to the Junior Conference on Data Science and Engineering** — 2024
- **Winner of Mali's excellence scholarship to study in France** — 2018

SKILLS SUMMARY

- **Programming**: Java, Python, C, C++, JavaScript
- **Libraries/Frameworks**: Scikit Learn, PyTorch, TensorFlow, Hugging Face, NodeJS, React.js
- **Tools**: Git, Docker, Kubernetes, SLURM

PROFESSIONAL EXPERIENCE

- **Research Intern in Computer Vision at University of Liège** — Liège, Belgium
  Subject: Leveraging motion for self-supervised object detection or classification — *November 2024 - February 2025*
  Advisors: Anthony Cioppa, Silvio Giancola and Marc Van Droogenbroeck
  Working on a research project where the goal is to develop a self-supervised learning framework in order to learn features that capture object motion in videos. The final goal is to transfer these representations to propagation downstream tasks such as video object segmentation, human pose propagation and semantic part propagation.
    - **Responsibilities**: Fully in charge of the research project and having many responsibilities including doing literature review, coding, running experiments on GPU clusters and presenting findings.

- **GenAI Research Intern in Computer Vision at CEA List** — Palaiseau, France
  Subject: Automatic image generation for team sports matches — *April 2024 - October 2024*
  Advisors: Adrien Maglo and Mohamed Chaouch
  Worked on a research project where the goal is to build an image generative model for generating realistic team sport matches (e.g soccer games). The main focus is to control the image generation by adding the ability to control many aspects of the scene including player positions and poses, camera calibration, etc.
    - **Responsibilities**: Fully in charge of the research project and having many responsibilities including doing literature review, coding, running experiments on GPU clusters and presenting findings.

- **AI research project at Télécom Paris** — Palaiseau, France
  Subject: Contrastive Learning in Graph Neural Networks with Optimal Transport — *September 2023 - March 2024*
  Advisors: Jhony H. Giraldo and Fragkiskos D. Malliaros
  Worked on a subgraph-based contrastive learning framework for graph self-supervised learning using Fused Gromow-Wasserstein distance at Télécom Paris' LTCI lab.
    - **Coding**: In charge of implementing the theory and running experiments with GPUs
    - **Research review**: In charge of keeping track of potential research papers related to our research in order to find interesting insights and approaches.
    - **Achievement**: Submitted a paper to a machine learning journal.

- **Laboratoire d'Informatique de Grenoble (LIG) Internship** — Grenoble, France
  Subject: Automatic Automaton Learning Algorithms — *May 2019 - July 2019*
    - **Optimization of learning algorithms**: Optimized hyper-parameters of different algorithms
    - **Determination of the best algorithm**: Compared optimized algorithms on benchmarks

Publications

- **A Fused Gromov-Wasserstein Approach to Subgraph Contrastive Learning**: TMLR 2025

  Authors: **Amadou S. Sangare**, Nicolas Dunou, Jhony H. Giraldo, Fragkiskos D. Malliaros

  Keywords: Self-supervised learning, contrastive learning, graph neural networks, optimal transport

- **Towards fine-grained spatial control for soccer game image generation**: CVPRW 2025

  Authors: **Amadou S. Sangare**, Adrien Maglo, Baptiste Engel, Mohamed Chaouch

  Keywords: Image generation, diffusion models, soccer

Projects

- **GAN-based super resolution**: Implementation of the research paper of (Ledig et al., 2017) that introduces a GAN-based super resolution model. The goal was to understand Generative Adverserial Networks. Tech: Python, PyTorch. Link: https://github.com/sangaram/gan

- **Image generation with VAE's**: Implementation of the paper of (Kingma et al., 2014) that introduces a new technique for generative modeling based on a latent variable model and a variational approximation of the true prior distrubtion with a deep neural network. Tech: Python, PyTorch. Link:https://github.com/sangaram/vae

- **Diffusion model**: Implementation of an unconditional Denoising Diffusion Probabilistic Model (DDPM) introduced by (Ho et al., 2020) with a UNet backbone and application to the CelebA-HQ-32 dataset. Tech: Python, PyTorch. Link: https://github.com/sangaram/diffusion

- **Speech to Speech Machine Translation**: Development of a speech to speech machine translation model with a cascaded approach consisting in performing speech to text followed by machine translation and text to speech. Tech: Python. Link: https://github.com/sangaram/S2SMT

Language proficiency

- **Bambara**: Native

- **French**: Fluent

- **English**: Fluent, Linguaskill (score: 180+), TOEFL-iBT (score: 90/120)

- **Arabic**: Notions