(+33) 0610670742
Marseille, France
cartelgouabou@gmail.com

Arthur Cartel Foahom Gouabou

AI Researcher - Data Scientist

GitHub: cartelgouabou
Website: cartelgouabou.github.io

Skills

Programming	Python, TensorFlow, PyTorch, Scikit-learn, SQL, NoSQL (MongoDB), Docker, Kubernetes, Git.
AI & Data Science	Machine Learning, Deep Learning, Computer Vision, Time Series Forecasting, NLP, LLMs, RAG Pipelines, Data Pipelines (ETL, Feature Engineering, Monitoring).
GenAI Tooling	HuggingFace Transformers, LangChain, Vector DBs (FAISS), OCR + LLM Pipelines, Prompt Engineering.
Dev & Deployment	FastAPI, Django, REST APIs, CI/CD, MLOps, Microservices, Monitoring (Prometheus, Grafana).
Cloud & Infrastructure	AWS SageMaker, Scaleway, Airflow, Docker Compose, Kubernetes.
Soft Skills	Technical Leadership, Project Management, Mentorship, Public Speaking, Technical Writing.
Languages	French (Native), English (B2), Ghomalah.

Education

PhD in Computer Science, *Aix-Marseille University* — Oct 2019 — Mar 2023
Master's degree in Mechatronics, *National Advanced School of Engineering of Sud-Alsace, GPA: 4.0/4.0* — Sep 2018 — Aug 2019
Engineer's degree in Mechatronics, *National Advanced School of Engineering of Douala, GPA: 3.33/4.0* — Sep 2015 — Aug 2017
Bachelor in Mechatronics, *National Advanced School of Engineering of Douala, GPA: 3.33/4.0* — Sep 2012 — Aug 2015

Technical Experience

AI Researcher – Senior Data Scientist — **Aug 2023 — Present**
DMS Logistics — *Marseille, France*

- Spearhead AI-driven innovations to optimize container logistics, leading to a **10% increase in operational efficiency**.
- Led the design and deployment of a **GenAI-powered insight engine** based on **Retrieval-Augmented Generation (RAG)**, enabling natural language exploration of CO2 monitoring KPIs for clients.
- Developed a document understanding pipeline combining **OCR systems with LLMs** to extract and summarize structured information from unstructured scanned documents.
- Designed and deployed **end-to-end time series forecasting features** within the SaaS platform, enabling clients to predict and act on key logistics KPIs with improved accuracy.
- Built and maintained scalable pipelines and services using **FastAPI, Docker, Kubernetes, Airflow**, and deployed on **Scaleway cloud infrastructure**.
- **Co-authored and presented scientific papers** at AI and domain-specific conferences, contributing to thought leadership in applied AI for logistics.

Research Assistant Professor — **Sep 2022 — Jul 2023**
Institut Fresnel — *Marseille, France*

- Conducted research in **computer vision and medical imaging**, including deep learning applications for 2D/3D image segmentation and object detection.
- Supervised Master's students on thesis topics involving **deep neural networks, generative models, and explainable AI**.
- Delivered graduate-level lectures in **deep learning, signal processing**, and modern ML techniques.
- Co-authored high-impact publications and conference papers in the field of computer vision.

Researcher in Computer Vision — **Oct 2019 — Aug 2023**
LIS Laboratoire d'Informatique et Systèmes — *Marseille, France*

- Developed deep learning models for **melanoma detection and classification** using CNNs and attention-based architectures.
- Conducted extensive experiments with **image segmentation and multi-modal fusion** techniques for early diagnosis.
- Led collaborations across institutions and secured funding for AI in healthcare initiatives.
- Published results in **top-tier medical imaging and AI journals**.

AI & Computer Vision Research Intern — **Apr 2019 — Sep 2019**
LIS Laboratoire d'Informatique et Systèmes — *Marseille, France*

- Created a proof-of-concept **AI-powered diagnostic tool** for skin cancer detection.
- Applied **feature selection and dimensionality reduction** (PCA, RFE) to optimize classifier performance.
- Implemented multiple ML models (SVM, CNN, MLP) with tuned hyperparameters for medical datasets.

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Academic experience

SQL Instructor – Part-Time Teaching **Oct 2024 — Present**
IUT Networking and Telecommunications, Aix Marseille University *Marseille, France*

- Provide hands-on **practical sessions in SQL databases** for undergraduate students in Networking and Telecommunications.
- Guide students through relational schema design, complex queries, indexing, and database normalization.
- Support the development of applied projects and assessments to strengthen industry-relevant database skills.

Research Assistant Professor (hourly volume: 192h/year) **09/2022 — 08/2023**
Faculty of Sciences of the University of Aix-Marseille *Marseille, France*

- Operation of computers - Licence 1 preparation to scientific studies : Tutorial and practical work
- Programming - Bachelor in mathematic and computer science : Practical works
- Introduction to software engineering - Bachelor in computer science : Practical works
- Embedded systems - Master degree in TSI : Tutorial and practical work
- Programming - Bachelor in computer science : Practical works
- Signal acquisition and processing - Master degree in EEEA : Practical works
- Digital processing of measurement - Bachelor in SPI : Practical works

Teaching Assistant (hourly volume: 64h/year) **10/2019 — 08/2022**
IUT Networking and Telecommunications, Aix Marseille University *Marseille, France*

- Transmission mathematics: Tutorial and practical work
- Communication Writing of internship report (MS WORD), presentation (MS Powerpoint): Tutorial and practical work
- Database (SQL): Practical work

Supervision

Master's student **03/2023 — 08/2023**
University of Strasbourg.
Internship for Master's thesis project.
Topic: "Detection, study, and reduction of outlier data in medical images using deep learning".
Technical environment: Python.

Master's student **03/2022 — 08/2022**
Ecole centrale de Marseille.
Internship for Master's thesis project.
Topic: "Segmentation of skin cancer images using convolutional neural networks".
Technical environment: Python, Matlab.

Publication

Arthur Cartel Foahom Gouabou, *et al.* Forecasting Empty Container availability for Vehicle Booking System Application. In: *Proceedings of the 28th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES-2024)*, 2024.

Faouzi Hakimi, Tarek Khaled, Mohammed Al-Kharaz, **Arthur Cartel Foahom Gouabou**, Kenza Amzil. Towards a Digital Twin Modeling Method for Container Terminal Port. In: *Proceedings of the 28th International Conference on Knowledge-Based and Intelligent Information & Engineering Systems (KES-2024)*, 2024.

Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Meryem Serdi, *et al.* Automated melanoma detection. An algorithm inspired from human intelligence characterizing disordered pattern of melanocytic lesions improving a convolutional neural network. *Journal of the American Academy of Dermatology*, 2024.

Arthur Cartel Foahom Gouabou, *et al.* Computer Aided Diagnosis of Melanoma using Deep Neural Networks and Game Theory: application on Dermoscopic Images of Skin Lesions In: *International Journal of Molecular Sciences*, 2022, vol. 23, no 22, p.13838.

Arthur Cartel Foahom Gouabou, *et al.* End-to-End Decoupled Training for Long-tailed Classification applied on Skin Lesion Classification from Dermoscopic images In: *Electronics*, 2022, vol. 11, no 20, p.3275.

Arthur Cartel Foahom Gouabou, *et al.* Rethinking decoupled training with bag of tricks for long-tailed recognition. In: *2022 Digital Image Computing: Techniques and Applications (DICTA)*, 2022, Sydney (Australie) (Oral presentation).

Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Meryem Serdi, *et al.* Automated detection of melanoma. Comparing a Convolutional Neural Network (CNN) approach with an algorithm assessing disorder in the pattern of pigmented lesions, intended to mimick onco-dermatologists visual analysis. In: *European Society for Medical Oncology Congress (ESMO)*. Elsevier, 2022.

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Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Meryem Serdi, *et al.* Automated detection of melanoma. Comparing an algorithm based on the characterization of pattern disorder of the lesion, mimicking dermatologist practice, with a convolutional neural network approach. In: *European Academy of Dermatology and Venereology Congress (EADV)*, 2022.

Arthur Cartel Foahom Gouabou, *et al.* HMLoss: une nouvelle fonction de coût robuste au déséquilibre de classe. *GRETSI 2022: XXVIIIème Colloque*, 2022, Nancy (France) (Poster presentation).

Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Meryem Serdi, *et al.* Détection automatique du mélanome : comparaison d'un algorithme fondé sur la caractérisation de l'aspect désordonné de lésions mélanocytaires mimant la pratique des dermatologues, avec une approche par CNN (Convolutional Neural Network) *Annales de Dermatologie et de Vénéréologie-FMC*, 2021, vol. 1, no 8, p. A135.

Arthur Cartel Foahom Gouabou, *et al.* Ensemble Method of Convolutional Neural Networks with Directed Acyclic Graph Using Dermoscopic Images: Melanoma Detection Application *Sensors*, 2021, vol. 21, no 12, p. 3999.

Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Caroline Gaudy-Marqueste, *et al.* Impact d'un artefact fréquent sur la détection automatique du mélanome à partir d'images dermoscopiques : approche deep learning combinée à l'algorithme Support Vector Machine *Annales de Dermatologie et de Vénéréologie*, 2021, vol. 147, no 12, p. A82.