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Arthur Cartel Foahom Gouabou

Data Scientist

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My educational background as an engineer in automotive mechatronics brought me into contact with the field of automation and artificial intelligence, which led me to focus on computer vision - in particular on the contribution of artificial intelligence to medical analysis and diagnosis as well as automotive safety. My ambition is to contribute to the development of the use of AI technologies for the early diagnosis of cancers (skin cancer, breast cancer, lung cancer, etc...) as well as the improvement of the safety of car drivers (driver assistance system, autonomous vehicle). My PhD research focuses on deep learning for skin cancer diagnosis. The main objective of my research is to test and develop innovative deep learning techniques for the early diagnosis of melanoma. A second objective is to integrate the expert knowledge of dermatologists into AI tools in order to facilitate the use of automatic diagnostic systems in real clinical context.

Skills

Tools and Languages	Python, Tensorflow, Scikit-Learn, R, Matlab, Git, LaTeX, MySQL
Technical	Deep Learning, Medical Imaging, Machine Learning, Computer Vision
Leadership	Public Speaking, Technical Writing, Project Management, Team Management
Communication	English, French (fluent speaker), Ghomalah

Technical Experience

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

- Implementation and training of deep learning algorithms for the automated diagnostic of melanoma.
- Benchmarked state of the art deep learning CNN for image classification and segmentation.

Researcher Intern in Computer Vision — **Apr 2019 — Sept 2019**
LIS Laboratoire d'Informatique et Systèmes — *Marseille, France*

- Designed a computer aided diagnosis system for skin cancer lesion (Melanoma).
- Use of HOG and LBP algorithms to extract .

Head of SAV — **Jan 2018 — Aug 2018**
Mapon Africa — *Douala, Cameroon*

- Planned and supervized the installations of GPS devices.
- Drafted the technicals documents.
- Provided technical support to customers.
- Training of technicians.
- Competitive intelligence.

Head of SAV — **Jun 2017 — Dec 2017**
Mapon Africa — *Douala, Cameroon*

- Installed GPS devices on vehicles.
- Configured and tested GPS devices before installation.

Technician Intern — **Jun 2016 — Sep 2016**
Autohaus Volkswagen — *Douala, Cameroon*

- Computer aided diagnosis of embedded system (using VAG, ELSA Win).
- Did maintenance and reparation of on-board vehicle systems.

Education

PhD in Computer Science, *Aix-Marseille University* — Oct 2019 — present
Master 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 2015 — Aug 2017
University Fellowship, Aix-Marseille University — 2019 — 2022

Publication

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.

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Jilliana Monnier, **Arthur Cartel Foahom Gouabou**, Meryem Serdi, 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.

Projects

Design of a module to help diagnose melanoma from deep learning **Apr 2019 — Aug 2019**
https://hal.archives-ouvertes.fr/hal-02515203/

- Review of AI methods and tools applicable in medical diagnosis.
- Supervised construction of descriptors relevant to melanocytic lesions.
- Validation of the model with a dermatologist.

Voice command from a Raspberry pi (tutored project) **Oct 2018 — Jan 2019**

- State of the art of techniques for speech recognition.
- Handling of the Google platform Assistant SDK.
- Drafted the project specification.
- Realized a prototype using Raspberry pi 3.

Design of a driver assistance system for vehicles **Jun 2017 — Dec 2017**
https://hal-amu.archives-ouvertes.fr/hal-02308475/document

- Drafted the project specification.
- Realized a prototype using a microcontroller.

Activities

IM team of LIS LAB: Research Presenter, Some Workshop, Creator/Facilitator 2019 — 2022
Tutoring of high school and college students, courses in mathematics, physics and computer science 2012 — 2018
Volunteer, ETIC Association: Conferences organization, Academic campaign 2014 — 2016