

## Education

- 2020 **Ph.D at Inria SAM, Université Côte d'Azur, France**, in Automatic, Signal and Image Processing.
- 2021 **Data Science bootcamp at Le Wagon, Marseille**, immersive data coding bootcamp.
- 2016 **Master of Science at Université Côte d'Azur**, in Computational Biology and Biomedicine.
- 2015 **Diplôme d'Ingénieur de l'Ecole Centrale de Lyon**, double degree in Computer Science and Imaging with Ecole Supérieure Polytechnique at Université Cheikh Anta Diop of Dakar, Senegal.

## Experience

- 2022 **Postdoctoral Researcher, Princeton University, USA** .  
Ongoing
  - Investigating applications of Artificial Intelligence in Healthcare.
- 2021 **Independent Researcher & Data Scientist, Marseille, France**.  
April-August
  - Deep Learning model Uncertainty assessment in Breast cancer classification.
  - Representation/latent space generation and t-SNE visualization.
  - Tree Detection in urban areas of Marseille within Hack4Nature project.
  - Transfer learning: improving DeepForest model with urban images.
- 2016-2020 **Ph.D Candidate at Inria SAM, Université Côte d'Azur, France**,  
*Three-dimensional Polarized Light Imaging: Towards Multiscale and Multimodal Analysis with Diffusion Magnetic Resonance Imaging*.
  - Computational Neuro-Imaging: Mathematical modeling and implementation.
  - Diffusion Magnetic Resonance Imaging (MRI): in-vivo reconstruction and validation.
  - 3D-Polarized Light Imaging (3D-PLI): Simulation and reconstruction of nerve fibers.
  - Deep Learning for diffusion MRI analysis: Spherical CNN for brain tissue microstructure estimation.
- 2016 **Research Intern at Inria SAM, Université Côte d'Azur**,  
5 months *Master thesis: Towards Diffusion MRI-based Tractography via 3D-Polarized Light Imaging*.
  - Solving 3D-PLI inclination sign ambiguity by extending Total Variation image restoration method to 3D.
  - Mathematical modeling, simulation and 3D-image analysis of brain nerve fibers (Python, Nibabel, Matlab).
- 2015 **Engineer Intern at KLEE Group, Plessis-Robinson, France** .  
6 months
  - Statistical analysis and prospecting tool for the Conseil Supérieur du Notariat de France.
- 2013-2014 **Industrial Research Engineer at IFPEN Energies Nouvelles & Ecole Centrale Lyon, France** .  
8 months
  - Design a new industrial spray-dryer to dry aqueous and organic solutions.

## Selected Publications

**Alimi, A.**, Deslauriers-Gauthier, S., Matuschke, F., Müller, A., Muenzing, S. E. A., Axer, M., Deriche, R.: Analytical and fast fiber orientation distribution reconstruction in 3D-Polarized Light Imaging. Medical Image Analysis, Volume 65, 2020, 101760. [Link to Journal](#)

Sedlar, S., **Abib A.**, Papadopoulou T., Deriche R., Deslauriers-Gauthier S.: A spherical convolutional neural network for white matter structure imaging via dMRI. MICCAI 2021 – 24th International Conference on Medical Image Computing and Computer Assisted Intervention, Sep 2021, Strasbourg, France. [Link to paper](#)

**Alimi, A.**, Deslauriers-Gauthier, S., Deriche, R.: Towards validation of diffusion MRI tractography: bridging the resolution gap with 3D-Polarized Light Imaging, ISMRM 2019 - International Society for Magnetic Resonance in Medicine, M 2019, Montreal, Canada. [Link to paper](#)

Sedlar, S., **Alimi, A.**, Papadopoulou, T., Deriche, R., Deslauriers-Gauthier, S.: Spherical convolutional neural network for diffusion MRI analysis. In Sophia Summit (2019, November), Sophia Antipolis, France. [Link to presentation](#)

**Alimi, A.**, Usson, Y., Jouk, P.S., Michalowicz, G., Deriche, R.: An analytical fiber ODF reconstruction in 3D-Polarized Light Imaging. ISBI 2018-IEEE International Symposium on Biomedical Imaging, 2018, Washington D.C., USA. [Link to paper](#)

**Alimi, A.**, Pizzolato, M., Fick, R.H.J., Deriche, R.: Solving the inclination sign ambiguity in three-dimensional Polarized Light Imaging with a PDE-based method. ISBI 2017-IEEE International Symposium on Biomedical Imaging, 2017, Melbourne, Australia. [Link to paper](#)

## Talks

- 2019 Talk at ISMRM 28<sup>th</sup> Annual Meeting & Exhibition, Montreal, Canada
- 2018 Talk at 15<sup>th</sup> IEEE International Symposium on Biomedical Imaging, ISBI, Washington DC, USA
- 2017 Talk at 14<sup>th</sup> IEEE International Symposium on Biomedical Imaging, ISBI, Melbourne, Australia

## Awards & Honors

- 2019 Magna Cum Laude Award at ISMRM 28<sup>th</sup> Annual Meeting & Exhibition, Montreal, Canada
- 2011-2016 Senegalese Government Scholarship
- 2008 Laureat du Concours General (Senegalese Olympiad, Gymnastics)

## Teaching

- 2017-2018 Teaching Assistant at Department of Computer Science at Sophia Antipolis IUT, Université Côte d'Azur  
Software system design using Unified Modeling Language, Supervizing two batches of 16 and 24 students.

## Skills

- Data Science Machine Learning (SVM, XGBoost, ...), Deep Learning (CNN, RNN, NLP), Maths & Statistics
- Programming Python, Pandas, Seaborn, Scikit-learn, Keras, Tensorflow, Matlab, SQL, Git, Docker, CI/CD, GCP
- Business Communication & Collaboration, Dedication, Long-life learning, Market & Product knowledge
- Languages Wolof (native), French (native), English (bilingual)

## Certifications

- 2021 **Machine Learning**, Stanford University authorized and offered online through Coursera.
- 2021 **Deep Learning**, Hands-on Artificial Neural Networks by Udemy (Scikit-image, Keras, Tensorflow,...).
- 2021 **Artificial Intelligence**, Full-stack Developer in Machine and Deep Learning, Convolutional Neural Nets, Recurrent Neural Nets, database, xml, API, Git, Docker, Heroku, Streamlit, FastAPI (in preparation).

## Associative & Personal Interests

Gymnastics award winner in national competitions in Senegal, 2 years amateur training in France.  
Team Captain of 20+ Football games, Fitness, Swimming. Travelling & discovering Cultures and Food.