Charlesquin **Kemajou Mbakam**

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"Make the change that you want to see in the world."

Education

Heriot-Watt University
Edinburgh, UK

PhD degree in Actuarial Mathematics
Jan. 2021 - Sep. 2024

- **Thesis Title::** Empirical Bayesian image restoration by Langevin sampling with total variation and denoising diffusion priors.
- **Supervisor:** Prof. Marcelo Pereyra, MACS Director of Research | Maxwell Institute for Mathematical Sciences & School of Mathematical and Computer Sciences (MACS) Heriot-Watt University, UK
- **Co-supervisor:** Prof. Jean-François Giovannelli, Groupe Signal et Image - IMS Université de Bordeaux, France

African Masters in Machine Intelligence (AMMI)
Kigali, Rwanda

Masters Degree in Machine Intelligence
Oct. 2019 - Dec. 2020

- **Thesis Title::** Empirical Bayesian estimation for semi-blind inverse problems: Application to deblurring image with a Gaussian kernel
- **Supervisor:** Prof. Marcelo Pereyra, MACS Director of Research | Maxwell Institute for Mathematical Sciences & School of Mathematical and Computer Sciences (MACS) Heriot-Watt University, UK
  Recipient of the Facebook and Google Scholarship

African Institute for Mathematical Sciences (AIMS)
Limbe, Cameroon

Masters Degree in Industrial Mathematics
Aug. 2017 - Feb. 2019

- **Thesis:** Design and Implementation of the database management system for the Cameroonian Chamber of Commerce (CCIMA).
- **Supervisor:** Professor Massimo Marchiori, University of Padova, Italy
  Recipient of MasterCard foundation Scholarship

University of Dschang
Dschang, Cameroon

Masters Degree in Mathematics
Nor. 2015 - Sep. 2017

- **Thesis:** Modeling, analyzing, and simulation of cabbage's nematode: Pultella Xylostella.
- **Supervisor:** Professor Berge Tsanou, University of Dschang, Cameroon

University of Dschang
Dschang, Cameroon

Bachelors Degree In Mathematics and computer Sciences
Oct. 2012 - Sep. 2015

Conferences and Workshops

Workshop on Bayesian methods and uncertainty quantification
Edinburgh, UK

Contributed talk: Empirical Bayesian image restoration by Langevin sampling with a denoising diffusion implicit prior
September 2024

Imaging inverse problems and generating model: sparsity and robustness versus expressivity
Edinburgh, UK

Poster: Empirical Bayesian image restoration by Langevin sampling with a denoising diffusion implicit prior
January 2024

11th Applied Inverse Problems Conference

Göttingen, Germany

CONTRIBUTED TALK: MAXIMUM MARGINAL LIKELIHOOD ESTIMATION OF REGULARISATION PARAMETERS IN PLUG & PLAY BAYESIAN ESTIMATION: APPLICATION TO NON-BLIND AND SEMI-BLIND IMAGE DECONVOLUTION

September 2023

Post-graduate Researchers in Inverse Problems, Machine Learning, and Optimization (PRIMO) workshop

Trieste, Italy

CONTRIBUTED TALK: EMPIRICAL BAYESIAN ESTIMATION FOR SEMI-BLIND INVERSE PROBLEMS: APPLICATION TO IMAGE DEBLURRING WITH TOTAL VARIATION REGULARISATION

May 2023

Bayesian Plug and Play Workshop

Paris, France

CONTRIBUTED TALK: REGULARISE PLUG & PLAY METHOD FOR LARGE-SCALE BAYESIAN INFERENCE: APPLICATION TO NON-BLIND AND SEMI-BLIND IMAGE DEBLURRING PROBLEMS

December 2022

Image Uncertainty Quantification (IUQ) Workshop

Gottingen, Denmark

CONTRIBUTED TALK: EMPIRICAL BAYESIAN ESTIMATION FOR SEMI-BLIND INVERSE PROBLEMS: APPLICATION TO IMAGE DEBLURRING WITH TOTAL VARIATION REGULARISATION

September 2022

SIAM Conference

Germany

CONTRIBUTED TALK: EMPIRICAL BAYESIAN ESTIMATION FOR SEMI-BLIND INVERSE PROBLEMS: APPLICATION TO IMAGE DEBLURRING WITH TOTAL VARIATION REGULARISATION

May 2022

3rd IMA Conference on Inverse Problems from Theory to Application

Edinburgh, UK

CONTRIBUTED TALK: EMPIRICAL BAYESIAN ESTIMATION FOR SEMI-BLIND INVERSE PROBLEMS: APPLICATION TO IMAGE DEBLURRING WITH TOTAL VARIATION REGULARISATION

May 2022

Experience

Rwanda Energy Group (REG)- LKMP

Kigali, Rwanda

CLIMATE CHANGE (INTERN)

Jun. 2019 - Oct. 2019

Chamber of Commerce, Industry Mines and Crafts (CCIMA)

Douala, Cameroon

WEB DESIGNER AND DATABASE MANGEMENT (INTERN)

Jun. 2018 - Dec. 2018

Online Certificate

Enterprise Design Thinking Practitioner, IMB — *Feb. 2019*

Reinforcement Learning for Trading Strategies by New York Institute of Finance & Google Cloud on Coursera, Coursera — *Mar 27, 2020*

Fundamentals of Machine Learning in Finance, Coursera — *Feb 13, 2020*

Convolutional Neural Networks, Coursera — *Jul, 2023*

Online Courses

Data Structures & Algorithms in Python, Udacity — *Nov. 2019*

Version Control with Git, Udacity — *Nov. 2019*

Introduction to Data Analysis, Udacity — *Nov. 2019*

Skills

Computer Skills

PYTHON, JAVA SCRIPT, MICROSOFT WINDOWS, MATLAB, R.

Languages

English,	*Excellent*
French,	*Mothertongue*

Hobbies

READING, FOOTBALL, FITNESS

Papers

Marginal likelihood estimation in semi-blind image deconvolution: A stochastic approximation approach
SIAM journal

C. K. MBAKAM, MARCELO PEREYRA, J.-F. GIOVANNELLI
Dec. 2023

Do Bayesian imaging methods report trustworthy probabilities?
SIAM journal, under review

D. Y. W. THONG, C. K. MBAKAM AND M. PEREYRA
May 2024

Empirical Bayesian image restoration by Langevin sampling with a denoising diffusion implicit prior
Journal of Mathematical imaging and vision, under review

C. K. MBAKAM, MARCELO PEREYRA, J.-F. GIOVANNELLI
September 2024