Farouk Yahaya

174 Rue Michel Ange, 62100 Calais, France • Tel : +33 66 5 69 69 19 • Email : faroya2011@gmail.com

RESEARCH EXPERTISE

- Machine Learning – Random Forest, Regression & Statistical analysis, Dimension Reduction, Neural Networks
- Signal Processing – Sensor Calibration, Low rank approximations, Matrix Factorization, Digital and Analog filtering
- Image Processing – Image analysis, filtering, edge detection, segmentation

TECHNICAL SKILLS

- Programming Languages: Python, MATLAB, C++
- Machine Learning Tools: PyTorch, Keras, TensorFlow, Scikit-Learn, Pandas, SciPy, Jupitar Notebook, Stats models
- Web & Software Development: AngularJS, NodeJS, HTML, CSS, JavaScript, WordPress
- OS Platforms: Microsoft Windows, Linux (Debian, Ubuntu, Knoppix, etc.), Unix, Macs
- Other Software Experience: Visual C++, Netbeans IDE, network simulators including ns2 and CSIM, VMWare, IdaPro, PhotoRec, penetration testing tools including Wireshark and Netcat

EDUCATION

May 2018 – Sept 2021 **Université du Littoral Côte d'Opale** Calais, France
PhD in Computer Science (Specialty: Signal Processing) (**Defence - September 2021**)
Thesis: "Compressive informed (semi-)non-negative matrix factorization methods for incomplete and large-scale data, with application to mobile crowd-sensing data"

Sept 2015 – Jan 2017 **University of Information Science & Technology** Ohrid, North Macedonia
MSc. Information Science and Technology (Specialty: Image Processing)
Thesis: "A novel edge detection algorithm via polynomial model fitting"

Oct 2010 – July 2014 **University of Information Science & Technology** Ohrid, North Macedonia
BSc. Communication & Network Security

PROFESSIONAL EXPERIENCE

May 2018 – Present **Research Assistant**
Université du Littoral Côte d'Opale Calais, France
- My research activities were in the areas of matrix factorization, random projections, image completion, sensor calibration and data streaming.
- I proposed a novel framework that combines weighted non-negative matrix factorization (NMF) and random projections (RP).
- I designed a new random projection scheme based on data streaming, solving the drawback of existing data independent schemes.
- Proposed a new sensor calibration method based on nesterov gradient accelerated method and random projection. Results published in (EUSIPCO 19, ICASSP,21)
- I co-supervised an MSc Student to work on a fast extension of our proposed sensor calibration method. Results published in (ICASSP'21).

Aug. 2017 – Apr. 2018 **IT-Support (National Service)**
Ghana Investment Fund for Electronic Communication, (GIFEC), Accra, Ghana
- Emergency Call Center Representative: As part of the 112 project, which seeks to unite all the emergency response units of the country---i.e. Fire, Police and Ambulance, I was responsible for receiving and processing all distress and emergency calls to the respective units.
- With my IT background I could also help in monitoring, installing, and configuring computer hardware, operating systems, and applications in the establishment.

Dec 2015 – Jan 2017 **Research Assistant**
University of Information Science & Technology Ohrid, North Macedonia
- My research activities were in the domain of Image processing. Specifically, Image filtering edge detection, Image analysis and Segmentation
- I developed novel image filtering techniques to diagnose pathological MRI scans of the human brain. Some of the tools I used were, OpenCV, MATLAB and CUDA.
- I proposed a new edge detection algorithm for applications in 2D MRI images. Findings published in (Yahaya, 2017)

Jul. 2014 – Aug. 2015 **Front-End Developer**
H-Sense, Ohrid, Macedonia
- Maintaining and enhancing Angular websites/apps in a client-server environment
- Collaborating with colleagues (client and server) to design and implement solutions to ongoing customer-facing needs
- Collaborating with our team of designers and product managers to understand, refine, and implement product needs in a creative manner.

TEACHING EXPERIENCE

Sept 2018– May 2021 *Teaching Assistant, Université du Littoral Côte d'Opale. Calais, France*
I had the opportunity to teach courses at undergraduate and master level. (128 credit hours)
- Big Data & Sensor (I helped design the course content, exams and grading)
- Multi-dimensional Data Analysis (this course is part of Complex Systems Engineering Master program)
- Introduction to Excel for Data Analysis (preparator course for freshmen Engineering students.)

OTHER TRAININGS / CERTIFICATIONS

Sept. 2020 – Nov 2020. **Neural Networks and Deep Learning , (** *Coursesa - Online Training*)

Jan 2018 – March 2018 **Machine Learning with Python (***Coursera - Online Training*)

Dec 2013 VMware Certified Associate – Cloud (*certificate issued*)
Dec 2013 VMware Certified Associate – Data Center Virtualization (*certificate issued*)

GRANTS / EXTERNAL FUNDING

- Doctoral scholarship, Hauts-de-France & ULCO, France — 2018–2021
- Government of Ghana Scholarship for Higher Education — 2010–2014
- Tuition Waiver, University of Information Science and Technology — 2015–2017

SERVICE / ASSOCIATIONS

- Reviewer, *Journal of Electrical and Computer Engineering (Hindawi Publishing Corporation).* – 2016 – Present
- Reviewer, *Biomedical Signal Processing, and Control*. – 2015 - Present
- Member, Institute of Electrical and Electronics Engineers (IEEE) – Present.

PUBLICATIONS

I am the (co)-author of 3 journal articles, 9 conference articles and 3 communications in regional workshops. Link

REFERENCES

Dr. Matthieu Puigt | Universit´e du Littoral Cˆote d'Opale, France. | Email : matthieu.puigt@univ-littoral.fr
Prof. Gilles Roussel | Universit´e du Littoral Cˆote d'Opale, France | Email: gilles.roussel@univ-littoral.fr
Prof. Carlo Ciulla | Epoka University, Albania | Email: cciulla@epoka.edu.al