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PROFILE

I am working on developing machine learning models and applying them to biological/medical data. My research focuses on bridging the gap between computational advancements and biological understanding in the field of medical genetics and genomics, focusing on unraveling the complex mechanisms of complex diseases.

RESEARCH INTERESTS

Biostatistics, statistics genetics, AI/machine learning, computer vision, deep learning, optimization, bioinformatics, mathematical modelling.

EDUCATION

1- **PhD in Biostatistics,** *University of Calgary*, Canada (2022-**pres**)
   Supervisor: Dr. Quan Long**,** Assistant Professor of Bioinformatics, Cumming School of Medicine, Dept. of Biochemistry and Molecular Biology, Dept. of Medical Genetics, Dept. of Mathematics and Statistics (Adjunct), Alberta Children's Hospital Research Institute (Member), Hotchkiss Brain Institute (Member), O'Brien Institute for Public Health (Member), University of Calgary in Canada.
   Co-supervisor: Dr. Thierry Chekouo Tekougang, Assistant Professor, Dept. of Mathematics and Statistics, Dept. of Biochemistry and Molecular Biology(Adjunct), University of Minnesota in the USA.

2- **Msc in Machine Intelligence,** *African Master's in Machine Intelligence (AMMI),* Ghana (2019-2021)
   Essay project: Optimization and Generalization of Shallow Neural Networks with Quadratic Activation Functions
   Supervisor: Moustapha Cisse, PhD, Formal Head of Google AI center in Accra, Ghana. Founder and Director of AMMI.

3- **Msc in Mathematical Sciences**, *African Institute for Mathematical Sciences (AIMS),* Senegal (2018-2019*)*
   Grade: Very Good Pass

Essay project: Abelian extension and crossed module for Lie algebras
Supervisor: Andre Saint Eudes MIALEBAMA BOUESSO, PhD, *Marien* Ngouabi University, Brazzaville, Congo

4- **MSc in Mathematics**, *University of Dschang (UDS),* Cameroon (2017-18)
Rank in Class – (1st/14)
Grade: Very Good Pass
Essay project: (Co)homologie des espaces de configuration
Supervisor: Calvin Tcheka, PhD, Dschang University, Cameroon

5- BSc **in Mathematics and Computer Science,** *University of Dschang (UDS),* 2015/2016
Rank in Class – (2nd/100)
University of Dschang (UDS), Cameroon

SCHOLARSHIPS, GRANTS, AND AWARDS

1- '**2023 Alberta Innovates Graduates Scholarship'**, **Amount: $31000**/year, for **3 years**, University of Calgary, Canada, **2023-2026**
2- '**Indigenous and Black Momentum Scholarship in Science**', **Amount: $25000** for **1 year**, University of Calgary, Canada, **2022-2023**
3- **"Graduate Assistant Teaching (GAT) Excellence Awards", Amount: $500**, Department of Mathematics and Statistics, University of Calgary, AB, Canada
4- University of Dschang(Cameroon), Special **Academic Excellence** (Paul Biya)
4- First overall **Best Graduating Student** of Master 2 in option Algebra (2018), Department of Mathematics and Computer Science, University of Dschang, Cameroon (2018)
5- Laureate at the **AIMS** Senegal (2018)
6- **Mastercard Foundation Scholar,** AIMS Senegal (2018-2019)
7- **Google, Facebook** scholarship, AMMI Ghana **(**2019-2020)
8- Laureate at the **AMMI** Ghana (2019-2020)
9- Young graduate student selected for the 6 months **AIMS Mathematical Sciences for Climate Resilience Internship Program (AIMS-MS4CR Internship Program)** (May 2021 - October 2021)

CONFERENCES AND FORUMS

1-Participant at NeurIPS **(Neural Information Processing Systems)** conference, Vancouver Convention Center, Canada (2024)

2- Oral Talk, BIRS Workshop, **"Novel Statistical Approaches for Studying Multi-omics Data",** July 13 - 18, 2025, Banff International Research Station, Banff, AB, Canada

2- Participants at **CIMPA (Centre International des Mathématiques Pures et Appliquées)** at Ecole Nationale Supérieure Polytechnique de Yaoundé**,** Cameroon (2018)

3- Young undergraduate researcher selected to participate in the **7**[th] **Heidelberg Laureate Forum,** Germany (2019)

4- Participant at **"Future of science"** conference**, Kigali**-Rwanda (2019)

5- Participant at the **11**[th] **Gene Golub SIAM Summer School,** on **"Theory and Practice of Deep Learning",** South Africa (July 2021)

6- Young graduate researcher selected to participate at the **8**[th] **Heidelberg Laureate Forum,** in digital due to the Covid-19 pandemic (2021)

7- Participant at **Hausdorff School, "Foundational methods in machine learning"**, Bonn, Germany, (June 2022)

7- BioNet Conference 2025, University of Calgary (Canada), 2025; Oral Talk and Poster presentation: 'Quantile-Gated Variational Autoencoder: Application to High Dimensional and Small Sample Sizes"

8- BMB advance conference, University of Calgary (Canada), 2023; Talk presentation: 'Representation learning and transfer learning applied in genetics and omics'

SKILLS

1- Languages: English (Fluent), French (Fluent)

2- Computing Skills: Java, Python, PyTorch, MongoDB, Metabase, MySQL, SQL,NoSQL, R, Git, Github, Excel, LaTeX, Matlab/Octave

3- Interests – Teaching, travelling, football, basketball, classical music

ONLINE CERTIFICATIONS

1- Machine learning *by Stanford University on Coursera*

2- **Introduction to Data Science in Python** *by University of Michigan on Coursera*

3- **Applied Machine Learning in Python** *by University of Michigan on Coursera*

4- **Natural Language Processing in Tensorflow** *by deeplearning.ai on Coursera*

5- **Mathematics for Machine Learning: Linear algebra** *by Imperial College London on coursera*

6- **Introduction to Deep Learning** *by NRUHSE on Coursera*

7- **Technical Support Fundamentals** *by Google on Coursera*

8- **Business Metrics for Data-driven companies** *by Duke University on Coursera*

WORK EXPERIENCE

1-Contributor for LLMs Training, Center for AI Safety, Outlier, and Scale AI Labs, 2024-**pres**

Key Activities:

Collaborating with the Center for AI Safety, Outlier, and Scale AI Labs, I focus on enhancing capabilities in reasoning, summarization, and general knowledge. Recently, I co-developed **Humanity's Last Exam (HLE),** a multi-modal benchmark designed to push the boundaries of current LLMs. HLE evaluates models on complex, closed-ended academic questions across diverse subjects, highlighting the existing gap between LLM performance and expert human reasoning

2- AI Technical Lead & Business Development, VirtuClinic Corporation, Alberta, Canada, Oct 2024 – December 2025

Key Activities:

I developed **AI-powered automation systems** and **AI digital agents- Digital Health Advisors (DHAs)** to enhance healthcare and wellness services. My work focused on creating intelligent systems for lead management, patient engagement, and business analytics, driving operational efficiency and improving patient outcomes.

3- Graduate Teaching Assistant, Dept of Mathematics and Statistics, University of Calgary, Alberta-Canada, 2022 – **pres**

<u>Key Activities:</u>

GA(T)s is appointed to provide teaching or instructional service, which might encompass lecturing assistance, laboratory supervision, office hours, grading assignments, tutorial direction, assistance in preparation of demonstration and instructional aids, and other related academic duties.

4- Teaching Assistant in Deep Learning and Neuroscience | Production Team Member, Neuromatch Academy Organisation (NMA) – USA, In-remote, 2022-**pres**

Neuromatch Academy is a massive, interactive, online summer school experience spanning hands-on modeling experience to meta-science interpretation skills across just about everything could be reasonably included in the labels "computational neuroscience" and "deep learning".

<u>Key Activies:</u>

Having substantial expertise in Python and experience with some aspects of neural data analysis and deep learning, I was working closely with a given pod for three weeks to help students solve problems and guide group projects.

5- Data Scientist Intern, Data Intelligence Department at ICRISAT-MANOBI Africa, Senegal, May-October 2021

<u>Key Activities:</u>

- I was working on delivering digital solutions and services for businesses, development projects and service providers in Africa's water and agricultural sectors.
- Using data intelligence, I was working on providing robust monitoring and evaluation reports, and sustainable management solutions.
- I managed, explored, analyzed, and interpreted the data collected, to realize dashboards for decision making, and for production purpose at Manobi/Africa.

6- Freelance Teacher in Data Science and Machine learning, *Hamoye Tutor Franchise Program,* Lagos-Nigeria Education, In-remote, June-Dec 2020

Key Activities:

- To plan and structure individual learning experiences, including curriculum mapping, schemes of work and lesson plans

- To plan sessions with clear and suitable learning objectives that form part of the appropriate scheme of work

- To promote, facilitate and encourage individual learning and group learning

- To prepare sessions which build on previous learning, and which encourage students to question

7- Data Engineer/MLops Intern, *Hamoye AI Labs,* 6-months Internship in remote, June-Dec 2020

Key Activities:

- I oversaw following up once the machine learning model was built.

- I was putting the model into production, testing it to ensure it is working correctly, and optimizecode for low latency. I was also making sure that the machine learning application is scalable and use tools like Docker and Kubernetes if required.

- As large amounts of data need to be processed quickly, I was ensuring that the application can handle the entering data.

8- Global Intern in Data Analysis, *TakenMind Inc.,* 1-month Internship in remote, May-June 2020

Key Activities:

- Managing large amounts of data to build machine learning models and glean valuable insights

- Building models based on different use cases and creating models that were useful for the projects

- I displayed a unique ability to identify and solve problems in Data Analytics and Finance for studies purpose.

REFERENCES

1- Dr. Quan Long, Assistant Professor, Dept. of Mathematics and Statistics (Adjunct), Dept. of Biochemistry and Molecular Biology, University of Calgary in Canada
Email: quan.long@ucalgary.ca
Role: PhD supervisor at the University of Calgary, Canada

2- Paul Taylor, PhD, Staff Scientist at National Institutes of Health, USA
Email: paul.taylor@nih.gov, pault@aims.ac.za
Role: Lecturer at AIMS Senegal (Introduction to Python programming)