#### **ABOUT ME**

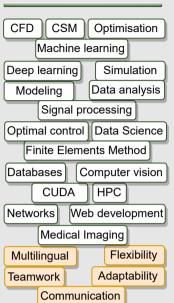
I am a curious and creative person; I like overcoming professional challenges by bringing in innovative ideas.

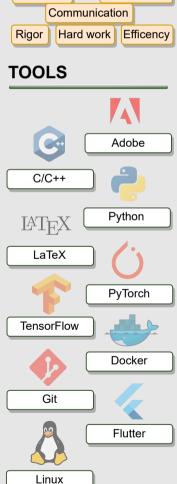
### ROUSSEL DESMOND NZOYEM

MRes, MSc, BSc, AS.



# **SKILLS**





# **LANGUAGES**

English
French
Japanese
Spanish

# **WORK EXPERIENCE**

### Private Instructor | Complétude



- · Weekly monitoring of high school students in mathematics;
- · Group tutoring during holidays.

#### Webmaster | Musica International

E September 2019 - October 2019



- Website management of a database composed of millions of scores;
- Maintenance of the showcase website, and other software.

### **EDUCATION**

### Master of Research (MRes) in Interactive Artificial Intelligence | University of Bristol

September 2021 - September 2022

P Bristol, UK

Training in Artificial Intelligence focused on:

- Data-driven AI;
- knowledge-driven Al;
- · responsible AI;
- · interactive AI.

# Master's degree (MSc) in Applied Mathematics | University of Strasbourg

September 2019 - September 2021

Strasbourg, FR

Training in Scientific Computing and Mathematics of Information (SCMI), exploiting both theoretical and practical aspects of various domains:

- Data analysis and Deep Learning;
- · Signal processing;
- Modeling/Simulation/Optimization of physical problems;
- High performance computing.

# Bachelor's degree (BSc) in Mathematics | Aix-Marseille University

Movember 2017 - July 2019

Marseille, FR

- Semesters 5 and 6 finalizing my Bachelor's degree;
- Particular accent on theoretical principles;
- Valedictorian with 15.25 / 20.

### Advanced technician's certificate in mechatronics | Oshima College of Technology

## April 2017 - June 2019

Oshima JP

- Intensive training focusing on mechanics, electronics, and computer science;
- Mastered assembly language for the CASL and CASL II machines;
- Participated in various robotics competitions.

### Associate degree in computer science | University of the People

**#** January 2017 - April 2019

Pasadena, USA

- Theoretical and applied computer science followed by web and software development projects;
- Construction of components for the HACK16 machine using the Logisim software;
- Network set-up of architectures for computers;
- Participated to various projects and MOOCs in computer science and electronics;
- Received the "Fondation Hoffmann" scholarship.

# Associate degree in maths. and phys. sci. | National Polytechnique Yaoundé (NASEY)

September 2014 - April 2017

Yaoundé, CMR

- · Completed the first two years in engineering school (MSP);
- Ranked sixth at the entrance examination amongst more than 4000 candidates;
- Obtained the MEXT scholarship.

### RESEARCH EXPERIENCE

## **R&D Internship** | Advanced Computing Research Centre (University of Bristol)

III June 2022 - August 2022

Pristol, UK

Accelerating the Algebraic Multigrid (AMG) method using Machine Learning for fluid simulation:

- Reviewed the literature for current ML methods for fluid simulation on unstructured meshes;
- Implemented direct and iterative competitive solvers for benchmarking AMG;
- Built a Graph Neural Network to predict better prolongation operators using DGL and PyTorch.

#### R&D Internship | Jacques-Louis Lions Laboratory (Sorbonne University)

February 2021 - July 2021

Paris. FR

Ice floe drifting and fracture by percussion in a granular model in the Arctic's Marginal Ice Zone:

- Studied the notion of initialization of a fracture in an elastic material;
- Proved Gamma-convergence results for the Francfort-Marigo model;
- Improved the MIZ simulator for Arctic ice-floes dynamics;
- Integrated the model's results into a real scale climate prediction software.

### R&D Internship | Institut Recherche Mathématiques Avancées (IRMA)

**III** June 2020 - August 2020

Strasbourg, FR

Inverse problem involving PDEs and AI for the reconstruction of a domain's density using infrared signals that spread following the radiative transfer equation (RTE), in order to detect cancer:

- Simulated the RTE (in 1D and 2D) using a Finite Volumes splitting scheme (in two-steps);
- Solved the associated inverse problem using a convolutional neural network (CNN);
- Improved the Al's results using a VNET.

# Soft tissue simulation using the PhiFEM method | INRIA - MIMESIS

October 2020 - January 2021

Strasbourg, FR

- · Reviewed the bibliography on finite elements and immersed boundary methods;
- Applied the PhiFEM method to the Poisson and the elasticity equations;
- Simulated body organ movements (in real-time) in order to assist surgeons.

### **AWARDS AND SCHOLARSHIPS**

#### **CDT Studentship | UK Research and Innovation**

**June 2021** 

Pristol, UK

• Fully-funded scholarship to follow a taught year within the Interactive AI CDT.

### MEXT (Monbukagakusho) | Japanese Government

November 2016

Tokyo, JP

- Prestigious international scholarship granted by the Japanese government;
- Only one chosen by the Japanese Embassy in Cameroon amongst hundreds of candidates.

### Fondation Hoffmann | University of the People (UoPeople)

April 2017, April 2018

Pasadena, CA, USA

• Scholarship granted (and renewed) only to the best of the promotion.

#### **Excellence Award | The President of the republic of Cameroon**

**#** July 2015, July 2016

Yaoundé, CMR

Price awarded for two consecutive years for my accomplishments at the NASEY.

### **Excellence Award | PKFokam Institute of Technology**

**July 2014** 

Yaoundé, CMR

Price received for my fourth place at the PKFokam Excellence Award.

### **Excellence Award | Les Brasseries du Cameroun**

October 2014

Yaoundé, CMR

• Grant awarded to the best student at the GCE advanced level in each region of Cameroon.

#### REFERENCES

**Dr. Emmanuel Franck** (Inria, University of Strasbourg) +33 3 68 85 02 05, emmanuel.franck@inria.fr

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+33 3 68 85 00 89, prudhomm@math.unistra.fr

Prof. Christophe Prudh'homme (IRMA, Unistra)

#### **HOBBIES**

Video games and coding: Fan and designer;

Cinema and music: Composition, documentary movies;

Football: Regular practice at the amateur level;

Traveling: Loves visiting the farthest corners of Earth.