

Kenneth Assogba

Internship in computational mechanics from April 1st, 2020

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EDUCATION

- **Master 2 Mathematical Engineering - Numerical Analysis - Mechanics** Paris, France
Sorbonne Université (former Université Pierre et Marie Curie) Sept. 2019 – Present
- **MSc Fundamental Mathematics and Applications - PDE and Geometry** Dangbo, Benin
Institut de Mathématiques et de Sciences Physiques Oct. 2017 – Aug. 2019
- **Bachelor of Computer Science** Cotonou, Benin
École Supérieure de Gestion d'Informatique et des Sciences Oct. 2016 – Dec. 2017
- **Bachelor of Mathematics** Dangbo, Benin
Institut de Mathématiques et de Sciences Physiques Oct. 2015 – Jun. 2017
- **Preparatory Classes in Mathematics and Physics** Dangbo, Benin
Institut de Mathématiques et de Sciences Physiques Oct. 2013 – Jun. 2015

EXPERIENCE

- **Research Intern** Dangbo, Benin
Research Unit in Mathematics and Mathematical Physics - IMSP May 2019 - Aug. 2019
 - Discrete monotonic schemes for the Schrödinger equation
 - ▷ **Literature review on Optimal Control in Quantum Mechanics**
 - ▷ **Construction of implicit and explicit monotonic schemes**
 - ▷ **Implementation of obtained algorithms and simulations with Octave**
- **Co-lead** Cotonou, Benin
Python Benin User Group Dec. 2018 - Aug. 2019
 - **pythonbenin.com**: Organization of monthly meetings around Django, Flask, Tensorflow...

COMPUTING SKILLS AND LANGUAGES

- **Programming**: Python, C++, Matlab, FreeFem++, Cuda, Code_Aster, Git, L^AT_EX
- **Languages**: English (Comprehension and writing of scientific texts), French(Native language)

SCIENTIFIC SKILLS AND PROJECTS

- **Numerical optimization and simulation**:
 - Optimal control of Schrödinger equation with fixed step gradient algorithm and operator splitting method. Implementation and simulation with **Python**, NumPy et Matplotlib
 - Study of models in population dynamics including those of Lotka-Volterra and Verhulst. (Scilab)
 - Nonlinear optimization under constraints by SQP method (project: space launcher in Matlab)
- **Modeling and Numerical Analysis**:
 - Approaching the solution of a partial differential equation via **finite element** and **finite volume methods** - Solving an elliptic 2D problem in **C++**.
 - Writing of a Jupyter notebook presenting the main numerical methods of solving nonlinear equations $f(x) = 0$ and their implementation in **Python**.
 - Python implementation of numerical methods for solving ordinary differential equations.

INTERESTS

- **Top Aéro** (top-aero.com): Co-lead aeronautical pole of the association of aeronautics and aerospace of Sorbonne Université.
- **Space exploration** inhabited and uninhabited: Passionate, I followed the launches of Ariane 5, space shuttle Atlantis, the adventure of the probes Voyager 1 and 2.