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 Mathematiques et de Sciences Physiques — *Oct. 2017 – Aug. 2019*
- **Bachelor of Computer Science** — Cotonou, Benin
  École Superieure de Gestion d'Informatique et des Sciences — *Oct. 2016 – Dec. 2017*
- **Bachelor of Mathematics** — Dangbo, Benin
  Institut de Mathematiques 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 Assistant 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, Octave, Cuda, Code_Aster, Git, LaTeX
- **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.