Alex Baowend Soom M. A. Zongo

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EDUCATION

PhD in Mechanical and Aerospace Engineering   August 2024 - Current
School of Engineering and Applied Sciences,
George Washington University, Washington DC, USA.

Master in Control Sciences and Engineering   September 2021 - May 2024
Department of Automation,
Tsinghua University, Beijing, China, GPA: 3.81/4.0

Machine Learning Summer School   June 2022 - August 2022
Oxford University, London, United Kingdom

Bachelor of Engineering in Aircraft Design   September 2018 - June 2021
Department of Aeronautics,
Beijing University of Aeronautics and Astronautics, GPA: 3.78/4.0

First Year of Engineering in Aeronautics and Astronautics   September 2017 - June 2018
Department of Aeronautics and Astronautics,
National Cheng Kung University, Tainan, Taiwan, GPA: 4.05/4.3

SKILLS AND INTERESTS

Interests	Artificial Intelligence, Flight Control, Reinforcement Learning, Explainable AI, Optimization, Mechanics, Robotics, Modeling and Simulation
Software And Frameworks	MATLAB, SIMULINK, Arduino, ROS/ROS2 (Robotic Operation System), Python, C/C++, SQL/NoSQL, JavaScript, Solidity
	PyTorch, Scikit-learn, OpenCV
Soft Skills	Self-learning, Initiative, Team Work, technical writing, presentation and communication
Languages	French, English, Chinese

PROJECTS

Courses Projects   September 2021 - September 2023
Tsinghua University
- Music Sound Source Separation via Deep Learning
- Menon Cells Hierarchical Classification with Machine Learning (ML)
- Application of Reinforcement Learning Algorithms on OpenAI gym LunarLander v2, for the count of Performance Optimization and Evaluation of Complex System course.

Aircraft Modeling, Control and Simulation   March 2020
Beijing University of Aeronautics and Astronautics
- A personal project to better understand flight mechanics and control. I used the RCAM model (FM_AG-08_TP088-9) as a basis to build a simulation in MATLAB/SIMULINK.
- FlightGear was incorporated as an interface for graphical illustration.

General Aviation Aircraft Design   Sept 2020 - May 2021
Beijing University of Aeronautics and Astronautics
- As part of my graduation project, I designed a Lightweight Sport Airplane following some requirements like maximum airspeed, endurance, weight, range and flight envelope.
- Another project consisted in the preliminary of a helicopter also based on provided requirements

RESEARCH PUBLICATION

Alex B. Zongo, LiQing. *Towards Intelligent Fault Tolerant Attitude Flight Control Of A Fixed-Wing Aircraft*, International Conference in Guidance, Navigation and Control (ICGNC), Changsha, China   August 2024

REVIEWS

Reviewer for the **International Conference in Guidance Navigation and Control (ICGNC) 2024** - *Springer Nature*

INTERNSHIP/TRAININGS

Robotics Software Engineer Intern,
Popular Robotics, Beijing, China   June-November 2022

I worked on a biped simulation in Gazebo with ROS & ROS2

A course on gait motion basics was drafted for an online course.

POSITION OF RESPONSIBILITY AND EXPERIENCE

Graduate Research Assistant   September 2024 - present
George Washington University Intelligent Aerospace Systems Lab

· Organizing and hosting the **Safe and Responsible AI workshop** on September 27, 2024, Washington DC, USA. This workshop provided participants the chance to identify challenges and opportunities, share work progress from multiple agencies (FAA, HASS COE, Johns Hopkins APL and MIT Lincoln Labs) and institutes (TRAILS, NIST AI, RAIUK), and promote research collaborations.

Research Assistant   September 2021 - May 2024
Tsinghua University Navigation and Control Lab

· Participated in various lab projects including Trajectory Based Optimization Performance Graphical Simulation
· Research on applying AI to Flight Control: Fault-tolerant flight control
· Resulting in a publication to the International Conference on Guidance Navigation and Control (ICGNC 2024).
· Reviewer for ICGNC 2024.

Secretary General   May 2022 - May 2024
Tsinghua University African Student Association

· A student association established by students with the aim of cultural exchanges, learning and leadership skill development
  among students and peers
· Lead in cultural activities planning and organization
· Team leader and active member working to promote leadership, and engagement in community service and problem solving.

R&D Engineer   September 2022 - May 2023
Tsinghua University Artificial Intelligence International Student Association club

· A graduate level AI club established by students with the aim of learning and professional skill development among students and peers
· Active member working to develop AI solutions for societal problems

EXTRA-CIRRUCULAR

- Seminar on **Future of AI, The 6th Academic Forum on Artificial Intelligence of Beijing Universities**, Beijing, China   April 2024
- Church Musician at **North Cathedral of Beijing**   September 2023 - July 2024

- Campus Service Volunteer at **Tsinghua University**   September 2021 - May 2024

- Piano Player, performed on **Global Village** event at Tsinghua University, Beijing, China   May 2023

- Piano Player in **Starry Night** event, at Tsinghua University, Beijing, China   May 2023

ACHIEVEMENTS

Chinese Government Scholarship Recipient	*2018-2024*
Outstanding Academic Achievement Awardee	*2019, 2020*
Taiwan Ministry of Foreign Affairs Scholarship Recipient	*2016-2018*

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.