KENECHUKWU EZEIFEMEELU

Saadiyat Island, Abu Dhabi, UAE 129188 | (971) 50-144-6937 | keneezeifemeelu@nyu.edu | Portfolio: keneezeife.github.io

EDUCATION

New York University Abu Dhabi, Abu Dhabi, United Arab Emirates **Exp Grad: May 2023**

- **Bachelor of Science in Mechanical Engineering, Economics (Minor)**
- **Current GPA: 3.99/4.0**
- **Relevant Coursework**: Finite Element Analysis; Thermodynamics; Numerical Methods; Partial Differential Equations; Modeling and Analysis of Dynamical Systems; Machine Design; Design and Innovation.

Loyola Jesuit College, Abuja, Nigeria **July 2019**

- 2nd in Nigeria, 2019 West African Senior School Certificate Examination **(**out of 346,098 students**)**
- SAT Math: 800/800, SAT Math II: 800/800, SAT Physics: 790/800

RELATED WORK EXPERIENCE

Computational Solid Mechanics, NYU Abu Dhabi, UAE **Jan. 2022 – Present**

Research Assistant

Website: https://www.computational-mechanics.org/

- Assisted professor and postdoctoral research associate with the development of a neural network to optimize run-time for non-linear computational mechanics.
- Created stiffness optimization program using Python and ANSYS interface for complex FEA models.
- Designed ANSYS static structural models to analyse load path across honeycomb structure at different orientations.
- Developed Python program to create solid geometries with randomly generated holes for damage propagation study.
- Presented findings using MS PowerPoint to the head professor and team weekly.

Modelling and Analysis of Dynamical Systems, NYU Abu Dhabi, UAE **Aug 2022 – Dec 2022**

Teaching Assistant

- Graded weekly assignments and quizzes for a class of 16 third-year Mechanical Engineering students.
- Provided regular feedback on graded assessments to explain errors to the students.
- Maintained an open channel for students to seek help with confusing topics from lectures.

Vijay Lab - Heatsink Lattice Optimization, NYU Abu Dhabi, UAE **Apr 2021 – Aug 2021**

Research Assistant

- Researched the use of TPMS lattices to improve heat transfer efficiency in micro-scale heat sinks.
- Designed CAD models of TPMS lattices selected based on high surface area to volume ratio.
- Developed computational fluid dynamic (CFD) models for promising structures and documented each model's performance using the derived pressure drop and Nusselt number.

Solar Ship Inc., Toronto, Canada **May 2022 – Aug 2022**

Remote Engineering Design Intern

Link: https://sites.google.com/nyu.edu/peacesavinglives/project

- Researched the use of solar-powered hybrid UAVs to tackle food insecurity in Arusha, Tanzania.
- Identified the points of needs and regions of agricultural surplus in Arusha to plot accurate flight routes.
- Drafted technical requirements for feasible operation, while considering climate and geography.
- Presented solution to chief executives of Solar Ship Inc. with comprehensive Electronic Press Kit.

NYUAD iGEM Competition Team, United Arab Emirates **Mar 2021 - Mar 2022**
Team Member

- Collaborated with staff and student members to design a Point of Care (POC) device to detect fungal infections in amphibians.
- Modified device to reduce flow time needed in lateral flow assays while maintaining accuracy of results.
- Recorded observations in group's Notion page for easy referral and collaboration.
- Researched relevant parts and chemicals to purchase and use in the POC device.

Student Affairs Office, NYU Abu Dhabi, UAE **Aug 2020 – Present**
Resident Assistant

- Manage resources and allocated finances to host events for a residential community of over 450 students.
- Draft reports on the general state of campus facilities as well as suggest possible improvements.
- Plan community events to provide a conducive residential environment for campus residents.

PROJECTS

Capstone Project – Optimization of Crumple Zones in Cars, NYU Abu Dhabi **Jan 2022 – Present**

- Optimized crumple zones of cars, focused on reducing the cost and weight of longitudinal crash bars.
- Investigated properties of promising materials, fillings, and geometries to result in designs with greater energy dissipation and crash resistance stiffness.
- Ran explicit dynamics simulations on CAD prototypes using finite element analysis software, ANSYS to select most promising prototypes for physical experimentation.
- Conducted compression experiments on physical prototypes to derive specific energy absorption using Instron Universal Testing Machine.

Automobile Heat Exchanger Design, NYU Abu Dhabi **Sept 2022**

- Designed the schematics for an automobile air-cooled tube-fin heat exchanger with an Ethylene Glycol 50:50 coolant, following ASTM standards.
- Derived appropriate values associated with the design such as heat transfer rate, total thermal resistance considering fouling, NTU, fin efficiency, effectiveness, pressure drop and pumping power.
- Modified design using MATLAB scripts to improve heat transfer rate, fin efficiency and effectiveness.
- Conducted off-design performance analysis at ambient air temperatures above and below the conventional range.

Light Rapper, NYU Abu Dhabi **Jan 2020 – Feb 2020**

- Collaborated with other group members to design the software and enclosure for five light-up knocker prototypes to aid people with hearing defects.
- Utilized online electronic design automation tool (EasyEDA) to create a customized PCB for the project.
- Programmed Arduino Circuit with Gyroscope (C++) to provide light sequence in response to vibrations caused by visitor knocks .

Fire Drill Simulator, NYU Abu Dhabi **Nov 2019 – Dec 2019**

- Designed a VR environment for fire drill training in schools and offices using Unity 3D and C# programming.
- Integrated Oculus Rift technology (Headset and Touch Controllers) for user interaction in the simulation.

2018 Interswitch Innovation Challenge - Naija Transit System, Nigeria. **Aug 2018 – Sept 2018**

- Utilized various data collection techniques such as interviews, surveys, and observation to formulate a user-friendly application to improve the Nigerian Public Transport System.
- Prepared presentation using visual and audio media to pitch formulated ideas to potential investors on atelevised show (Link: video link).

AWARDS/ACCOMPLISHMENTS

2nd Best in Nigeria, **2019 West African Senior School Certificate Examination. Dec 2020**

- Out of the approximately 346,098 students that sat for the 2019 national high school certification examination, I emerged the candidate with the second best score in Nigeria.

3rd Position, **2018 Interswitch SPAK Innovation Challenge**. **Sept 2018**

- Out of 11,412 students nationwide, I led a team of eight students from different regions and cultures in Nigeria to pitch an innovative solution to the nation's public transportation issues.

SKILLS

Language: English (Native)

Technical/Digital Skills: Python including SciPy and NumPy (Advanced) | C/C++ (Advanced) | MATLAB (Advanced) | MS Office Suite (Advanced) | CAD/SolidWorks (Advanced) | ANSYS (Advanced) | COMSOL (Intermediate) | Machine Learning | Additive Manufacturing | Stata (Advanced).

Personal Skills: Project Management | Project Development | Problem solving | Critical Thinking.

NETWORKS AND MEMBERSHIPS

American Society of Mechanical Engineers (ASME) Oct 2021 - Present

Student Member of the American Society of Mechanical Engineers (ASME). I am also a member of the American Society of Mechanical Engineers (ASME) Chapter at NYU Abu Dhabi.

HOBBIES AND INTERESTS

Intercollegiate Basketball

- Registered player in the Abu Dhabi Inter-University Sports League (ADISL).
- Volunteer in the Special Needs Adaptive Program (SNAP) basketball, a basketball program in which university students teach basketball skills to special needs children in the UAE.