**Favour Arinze, Adimora**

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**PROJECTS**

**Stirling Engine Prototype**

* Designed and built a compact Stirling engine system tailored for integration into low‑noise robotic platforms, demonstrating efficient heat‑to‑mechanical energy conversion using external combustion using Fusion360.
* Performed thermodynamic cycle analysis to optimize displacer and power piston dimensions for maximum efficiency
* Simulated heat transfer and fluid dynamics in CAD software to predict performance under varying temperature differentials
* Conducted performance testing to evaluate power output, efficiency, and durability over extended operation

**Robotic Arm**

* Designed a four-axis robotic arm using Fusion360.
* Designed each joint and axis to allow full-range motion, ensuring accurate and smooth articulation across all four degrees of freedom.
* Focused on structural stability and efficiency, optimizing the robot’s design for both functionality and manufacturability.
* Generated detailed 3D renders and drawings to visualize the assembly process and individual components

**Automated Folding Stairs**

* Designed and developed a unique staircase system that automatically adjusts its height and angle to accommodate user preferences and spatial constraints, enhancing accessibility and space utilization using Fusion360
* Created detailed 3D CAD models and assemblies to validate fit, motion, and structural integrity Focused on structural stability and efficiency, optimizing the robot’s design for both functionality and manufacturability.
* Generated detailed 3D renders and drawings to visualize the assembly process and individual components

**SKILLS, TOOLS, TECHNOLOGIES**

* Languages: Python, C++
* Software: Autodesk Fusion360, Ansys, SolidWorks, AutoCAD, CATIA, Autodesk Inventor, KiCAD, Microsoft Office
* Skills: Mechanical design, 3d modelling, 3d printing, PCB Design, Simulation, FEA Analysis, CAE

**EDUCATION**

**Bells University of Technology Ota, Ogun State**

B.Eng. Mechatronics Engineering 2022 – Present