

# Favour Arinze, Adimora

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## PROJECTS

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### 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

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- 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

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**Bells University of Technology**  
B.Eng. Mechatronics Engineering

**Ota, Ogun State**  
2022 – Present