

Florence Lee Fasugbe

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BIOMEDICAL & MECHANICAL SYSTEMS ENGINEER|RESEARCH SPECIALIST|CROSS-CULTURAL COLLABORATOR

Innovative Mechanical Engineering with over five years of specialized research in biomedical and bioengineering fields. Expertise in 3D printing, computational modeling, and experimental design, complemented by proficiency in Python, MATLAB, and advanced laboratory instrumentation. Leadership demonstration across international research collaborations and community outreach. Aspiring to incorporate engineering skills to develop cutting-edge biomedical and mechanical systems that improve healthcare and everyday innovative outcomes.

KEY EXPERTISE & CORE ACCOMPLISHMENTS

Biomedical Device Design

Fluid Dynamics & Analysis

Computational Modeling

3D Printing & Prototyping

Laboratory Instrumentation

Cross-cultural Collaboration

Research & Development

Project Management

Technical Communication

- Designed and tested fluid-structure interaction models using 3D printed biomedical devices.
 - Developed and evaluated heart valve prototypes in laboratory environments.
 - Secured NSF funding for intravascular catheter cleaning system research.
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PROFESSIONAL EXPERIENCE

Research Assistant - Experimental Biofluids Lab

Summer 2022-Summer 2025

Northern Arizona University - Flagstaff, AZ

Conducted experimental research on biomedical fluid dynamics and device testing.

- Designed and tested fluid-structure interactions using 3D printed biomedical devices.
- Developed prototypes of heart valves and evaluated the performance in laboratory settings.
- Performed particle flow analysis and maintained laboratory instrumentation for continuous research.

Research Assistant - System LSI Research Center

Winter 2022-Summer 2023

Kyushu University - Fukuoka, Japan

Engaged in clinical biomedical device testing and data analysis for human balance and gait.

- Created Python scripts for sensor data analysis and Gravicoder system outputs.
- Applied control systems to assess human movement and posture stability.
- Contributed to research on clinical applications of biomedical devices.

Research Assistant - Bioengineering Devices Lab

Winter 2021-Summer 2022

Northern Arizona University - Flagstaff, AZ

Modeled cardiovascular systems and supported catheter testing within vein replica.

- Modeled blood flow dynamics in human cardiovascular systems.

- Conducted catheter insertion tests and X-ray imaging for device validation.
 - Supported NSF-funded projects on intravascular catheter cleaning technology.
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EDUCATION & CERTIFICATIONS

Bachelor of Science in Mechanical Engineering & Bachelor of Arts in Asian Studies

Northern Arizona University, Flagstaff, AZ, Expected 2026

Combined engineering and Asian studies program with a minor in Japanese language, emphasizing cross-cultural communication and technical expertise.

Japanese Academic Courses (JAC); Japan in Global Society; System LSI Research Internship

Kyushu University, Fukuoka, Japan, Spring 2022

Participated in a study abroad program focusing on Japanese language, societal studies, and integrated system research.

IRB Training (CITI)

Certification, CITI Program, 2022

X-Ray Safety Certification

Certification, Northern Arizona University, 2022

Chemical Hygiene Certification

Certification, Northern Arizona University, 2022

Bloodborne Pathogens Certification

Certification, Northern Arizona University, 2022

SKILLS & ADDITIONAL INFORMATION

Technical Skills

- Python Programming
- MATLAB
- CAD & 3D Printing
- Fluid Dynamics Testing
- Biomedical Device Prototyping
- X-ray Imaging
- Laboratory Instrumentation
- Control Systems
- Data Analysis
- Medical Device Design

Affiliations

- Theta Tau Engineering Fraternity (Omicron Epsilon)
- LSAMP Diversity Initiative
- Interdisciplinary Global Program (IGP)

Awards & Honors

- NSF Grant for Intravascular Catheter Cleaning Device, National Science Foundation, Spring 2022
- Nelson International Funding for Study Abroad Research, Nelson International, Spring 2023
- W.E.B. Du Bois Emerging Scholars Fellowship Award, Northern Arizona University, Spring 2024

Additional Information

- Fluent in English and conversational in Japanese
- Strong intercultural communication skills developed through international research and programs.