Kiflom Tesfamariam
(786)-769-9251| kiflom.b.tesfamariam@gmail.com | Oakland, CA 94610
Fully Work Authorized | No Visa Sponsorship Required | Open to Relocation

PROFESSIONAL SUMMARY

EIT-licensed Mechanical engineer with over 6+ years of experience in mechanical system design, HVAC, CFD modeling & simulation, thermal analysis, energy recovery, specializing in thermodynamics, heat transfer, and fluid dynamics. Skilled in preparing layouts, drawings, technical specifications, cost estimates, and design calculations. Proficient in CAD, ANSYS, and COMSOL computational software for modeling, simulation, and FEA analysis. Experienced in quality control inspections, failure investigations, and technical support for equipment installation and testing. Strong communicator with proven ability to prepare clear reports and archive technical documentation

Key Skills

- **Mechanical Design tools**: SOLIDWORKS, AutoCAD, ANSYS, COMSOL Multiphysics, Matlab/Simulink
- **Engineering computations:** Structural & thermal analysis, design & optimization of fluid machines, HVAC
- **Data Analysis & Visualization**: Pandas, NumPy, SciPy, Tableau, Plotly, Seaborn
- **Programming Languages and OSs**: Python, C++, FORTRAN, SQL, MySQL, PostgreSQL, MongoDB
- **Productivity Tools & OS**: Microsoft word, excel, Powerpoint, Windows, Linux
- **ML & AI Frameworks:** Scikit-Learn, TensorFlow, Keras, PyTorch, Hugging Face
- **Professional Communication:** paper writing, technical report, engineering memoranda, and collaboration with cross-functional teams

PROFESSIONAL EXPERIENCE

Machine Learning Engineer
Bisha Mining Share Company | 09/2020 – 08/2023

- Launched a Support Vector Machine for separating the core samples into high-grade and low-grade categories.
- Built a Support Vector Machine for identifying different types of minerals based on their chemical composition.
- Applied SVM for estimating the depth of gold mineral and boosted the performance by 14% over traditional
- Performed statistical analysis, feature engineering, fine-tuning, and built a pipeline for executing ML requests.

Research and Teaching Assistant
Florida International University, Florida | 08/2018 – 08/2020

- Performed design calculations and numerical simulations for transient air, heat, and moisture transfer in a building system using COMSOL Multiphysics
- Created a 3D CAD model and complex TMC geometries in SolidWorks
- Conducted Multi-phase flow simulations in ANSYS Fluent to evaluate performance
- Generated and validated computational meshes for complex 3D geometries, preparing technical documentation, sketches, and reports to support quality reviews
- Developed, evaluated, and validated a finite element analysis (FEA) of a bicycle crank using ANSYS "Static Structure", applying structural mechanical analysis to assess fatigue, creep, stress, strain, and safety margins
- Prepared clear and concise technical reports and design documentations, ensuring results were aligned with project specifications

ADDITIONAL WORK EXPERIENCE

Research and Teaching Assistant
Eritrea Institute of Technology | 01/2014-10/2017

- Designed and performed calculations for a 12 m^3 biogas plant to convert cafeteria food waste into energy
- Prepared technical specifications, cost estimates, and layouts to ensure safe and efficient
- Provide technical assistance and coordination to the department head and advise students on engineering projects
- Prepared, assembled, and validated laboratory teaching equipment, including a heat pump & centrifugal pump
- Conducted performance testing on equipment such as pipe friction pipe, centrifugal pump, and compressors
- Taught and coordinated undergraduate CAD and mechanical engineering courses for 300 + students
- Ensured and guided students' use of accurate application of engineering computational software such as SolidWorks, MATLAB, and MATLAB Simulink

Associate Mechanical Engineer
Beleza Thermal Power Plant, Eritrea | 06/2012 – 12/2013

- Designed and optimized mechanical HVAC systems, including component selection, design calculations, cost estimates, and specifications to ensure desired performance
- Performed quality control inspections of materials, equipment, and operations to verify efficiency and safety
- Directed investigations of equipment failures, diagnosed faulty operations, and recommended corrective actions to improve system reliability and performance
- Supported preventive and corrective maintenance of HVAC mechanical components, ensuring safe, efficient, and cost-effective operation

Mechanical Engineer Intern
Alef Aeronautics, San Mateo, CA | 10/2023 – 01/2024

- Designed and developed the suspension system for a prototype flying vehicle using SOLIDWORKS
- Supported the manufacturing, assembly, and testing of the suspension system to validate performance and safety
- Designed and fabricated the vehicle body using advanced composite materials (carbon fiber)
- Documented design criteria, testing results, and technical specifications

Mechanical Engineer, Internship
Beleza Thermal Power Plant, Eritrea| **07/2011 – 08/2011**

- Collaborated with a multidisciplinary team to investigate equipment failures in steam power systems, performing inspections, diagnosing faulty operations, supporting the overhaul, and repairing mechanical components

Mechanical Engineer, Internship
Eritrea Equipment PLC, Eritrea | **07/2010 – 08/2010**

- Assisted senior engineers in the inspection, repair, overhaul, and cleaning of heavy machinery engine components, supporting maintenance activities to ensure reliability, safety, and compliance with operational standards.

EDUCATION

Master of Science (MS), Mechanical Engineering **02/2020**
Florida International University
Bachelor of Science (BS), Mechanical Engineering **04/2013**
Eritrea Institute of Technology

PROFESSIONAL DEVELOPMENT CERTIFICATIONS

- EIT from the California Board for Professional Engineers, Land Surveyors, and Geologists **2025**
- Applied Computational Fluid Dynamics, Coursera **2025**
- Professional Certificate in Machine Learning and Artificial Intelligence, UC, Berkeley Executive Education, College of Engineering, and Haas School of Business **03/2023**
- Data Science and Machine Learning BootCamp, Udemy
- Data Structure and Algorithms, Udemy
- Computer Vision with OpenCV and Deep Learning, Udemy
- Complete guide to TensorFlow for Deep Learning, Udemy