

Statement of Purpose:

Throughout my life journey, I have been fortunate to encounter a diverse range of experiences that have significantly shaped the lens through which I perceive the professional world. Born and raised in Eritrea, I grew up in a society where access to education was limited, and my family often relocated due to political and economic unrest. These challenges instilled in me adaptability, resilience, and resourcefulness. They also nurtured a deep appreciation for collaboration and lifelong learning qualities that I now bring to my professional career as a mechanical engineer.

My path to becoming a mechanical engineer is unconventional. Despite the hardships, my family instilled in me the importance of education, creating new things, and growth, and I then developed a strong curiosity about designing and creating machines that improve the quality of life. This passion led me to the Eritrea Institute of Technology, where I graduated with a Bachelor of Science in Mechanical Engineering with *Great Distinction* in 2013. I used my Mechanical Engineering skills to design a high-performance AC system that provides high-quality air and a comfortable living environment. My academic journey continued at Florida International University, where I earned a Master of Science in Mechanical Engineering in 2020. During this time, I deepened my knowledge in the mechanical engineering field and established a solid foundation in thermodynamics, heat transfer, fluid dynamics, HVAC systems, and computational modeling, utilizing tools such as ANSYS, COMSOL, MATLAB, SolidWorks, and AutoCAD.

My professional experiences have been equally diverse and formative. As an Associate Mechanical Engineer at Beleza Thermal Power Plant, and during internships at Beleza Thermal Power Plant and Eritrea Equipment PLC, I designed and optimized HVAC components and supported inspections, overhauls, and repairs of mechanical systems, ensuring compliance with operational standards and safety codes. These early experiences laid the groundwork for my technical skills in troubleshooting, quality control, and preventive maintenance. Later, as a Research and Teaching Assistant at the Eritrea Institute of Technology and Florida International University, I deepened my expertise in design, modeling, and simulation while mentoring students and contributing to laboratory and research projects. Most recently, as a mechanical Engineer Intern at Alef Aeronautics, I contributed to the design, manufacturing, and testing of the suspension systems and composite structure for prototype flying vehicles, further expanding my experience in modern engineering applications.

In addition to my mechanical engineering background, I have also gained valuable experience in the intersection of engineering and artificial intelligence as a Machine Learning Engineer at Bisha Mining Share Company. There, I developed models for predictive analysis of mineral systems, highlighting my ability to integrate emerging technologies into traditional engineering practices. These interdisciplinary skills allow me to approach problem-solving with innovation and foresight.

The Mechanical Engineer role with the Department of Water Resources (DWR) is an ideal opportunity for me to apply my skills, experience, and educational background in the service of a mission I deeply value: providing safe, reliable, and sustainable infrastructure for the people of California. I am particularly drawn to the position's emphasis on preparing engineering design and specifications, conducting inspections, supporting testing, directing failure investigations, and implementing corrective actions. All

my prior experiences strongly align with these responsibilities, as I have successfully prepared cost estimates, performed design calculations, conducted quality control inspections, and provided technical support in both academic and industrial environments.

Furthermore, I thrive in a collaborative environment that requires accurate analysis and effective communication, qualities explicitly articulated in the position's requirements. My commitment to teamwork, working in diverse environments, cross-functional collaboration, generating new ideas, and professional growth ensures that I can contribute effectively throughout every stage, from planning and design to inspection, troubleshooting, construction, and maintenance. I am also prepared and willing to travel, work in challenging environments, and contribute to emergency operations when called upon.

In closing, my academic excellence, professional versatility, and personal resilience make me a strong candidate for this role. I am eager to bring my passion for mechanical engineering skills, my technical expertise in design and inspection, and my dedication to continuous improvement to the Department of Water Resources. I look forward to the opportunity to contribute to the State Water Project and to furthering DWR's mission of safety, sustainability, and innovation.

Sincerely,

Kiflom B. Tesfamariam