

Dear Hiring Manager,

I am writing to express my strong interest in the Mechanical Engineer position at your organization. As a Structural Mechanics Engineer with expertise in finite element analysis and aerospace systems, I am excited about the opportunity to contribute to your team's engineering challenges.

My background combines strong technical foundation in mechanical engineering with practical experience in structural analysis and design optimization. At ST Engineering, I have developed and implemented sensitivity analysis methodologies for aeroacoustics models, enabling more efficient structural design processes. I have also created automation workflows that reduced analysis time from several months to one week, demonstrating my commitment to improving engineering efficiency through technological innovation.

My experience at AMD provided valuable insight into the intersection of mechanical engineering and computational methods. I integrated finite element simulations with Python using PyANSYS, developing surrogate models that achieved 99.5% runtime reduction for board-level reliability analysis. This experience taught me the importance of computational efficiency in modern engineering workflows.

My technical competencies include:

- **Simulation software:** ABAQUS, ANSYS, PyANSYS, Patran/NASTRAN, Ansys APDL
- **Analysis methods:** Finite element analysis, structural mechanics, fatigue analysis, fracture mechanics
- **Programming:** Python, MATLAB, Mathematica, C#, C, FORTRAN
- **Technical areas:** Aeroacoustics, thermomechanics, structural optimization, reliability analysis

My academic background in Aerospace Engineering with specialization in Mechanical Engineering from NTU, where I achieved Honours (Highest Distinction) in an accelerated program, has provided me with both theoretical depth and practical problem-solving skills. I have applied these skills to projects involving advanced materials characterization, including parametric fatigue modeling for hydrogel materials and fracture mechanics analysis using modified phase field methodologies.

I am particularly drawn to this role because it offers the opportunity to apply my expertise in structural mechanics while continuing to develop innovative solutions for complex engineering challenges. I am committed to delivering high-quality engineering solutions and would welcome the opportunity to discuss how my background and skills can contribute to your team's success.

Thank you for your time and consideration. I look forward to hearing from you.

Sincerely,

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