Cover letter

Computational Sciences engineer – Ambigai consultancy services GmbH

Bienroder Weg 54,
38108, Braunschweig

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Dear Recruiting team,

My name is Suba Siva Chandran Kalimuthu. I am writing to apply for any available position in your esteemed company. As a master's student in Computational Sciences in Engineering at the TU Braunschweig, I have always been fascinated by the field of simulation, in which numerical methods are implemented for the execution of technical systems, which reduces time and costs in real technical applications.

I have acquired technical competence in the field of **FEM** and gained extensive practical experience in **ABAQUS & ANSYS** by working as a student assistant at the Institute for Joining and Welding Technology. At my university, the institute carries out research projects on various bonding technologies and I have been helping them with ABAQUS simulations in the field of **thermal and mechanical analysis** for more than a year. I have modeled and delivered individually precise solutions on an aggressive timeline that have contributed to the rapid progress of the research. More specifically, I had developed a Python script to automate the stress-strain curve in 4 days, which proves my efficiency with the programming language. I was also involved in certain tasks, such as on the topology optimization to perform automations in the NASTRAN deck using the **Python** subroutine. Also, I have performed lab experiments doing **mechanical tests** such as butt bonded cylinder, TENF, TDCB for characterizing the material properties of structural adhesives. In addition to this, I performed the numerical analysis in ABAQUS to verify the experimental results and built a temperature dependent material model for one of the adhesives used in car body structure development.

During my bachelor's degree, I developed a racetrack for Nitro RC races in **AutoCAD** as well as some important CAD models in **CATIA**. During my student work at **GNS mbH**, I worked with **ANSA** as a pre-processor which helped with the migration of one simulation database to another and the redesign of the model according to the project goal. The results I received were very accurate to be included in the **Crash simulation**. This was of immense benefit to the team, and my team leader for crash simulations and methods appreciated me for it. In addition, I gained experience in **Animator 4** as a postprocessor to analyse the simulation results of the BIW of the car model in ABAQUS inorder to predict the **adhesive damage**. I am currently doing my Master thesis developing a **process simulation** model for the fusion bonding technique combining bonding with additional glue film to manufacture lightweight structural components in a car. I am also accomplishing potential analysis of car components within the **Toyota Camry model** available at GNS mbH and performing Crash simulation to know about the areas which are critical and to predict the adhesive failure, material failure and Intrusions and to reinforce those areas with FRP patches to make it lighter.

I would like you to review my application for this vacancy as I believe the key requirements for the position are closely related to my work experience as described above. I believe that my enthusiasm for modeling, including simulation experience and skills, will be a valuable asset to the team. I would also appreciate the opportunity to speak to you and can be reached on +49 15175489000 and subasivachandran@gmail.com

Thank you in advance for your time and consideration.

With kind regards,

Suba Siva Chandran.