To whom it may concern

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Recommendation letter

14 January 2022

It is my pleasure to recommend Bhat Keelanje Srinivas Pavan to a position related to computational sciences and machine learning. I have known Pavan for a few months during which time he worked as a master student in our group.

Pavan has worked closely with a PhD student and me in the field of numerical analysis of the deformation behavior of short glass fiber reinforced thermoplastics. In that context, Pavan further developed a machine learning based approach for the virtual characterization of plastic composites by means of physics based neural networks. This hybrid AI-method combines concepts of continuum mechanical homogenization and machine learning which allows for a very efficient numerical treatment of materials with complex microstructure. To address this problem, Pavan benefits from his in-depth knowledge of continuum mechanics and applied mathematics in combination with his profound programming skills in various programming languages. In particular: Fortran for material modeling, PyTorch to set up the AI-part, Python and shell scripting to realize a fully automated computing and training workflow in our high-performance computing environment. His very structured approach allows him to efficiently solve problems in a very short time.

Besides the technical skills, I perceived Pavan as a very curious person which perfectly qualifies him for a research position. It is a true pleasure working with Pavan and I wish him all the best for his application. Please do not hesitate to contact me if you have any questions.

Yours sincerely

pki, BOSCH, DE, F, A, Fabian.Welschinger

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