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To Whom It May Concern,

Re: Reference for Mr Christopher Brampton

Chris Brampton has been my PhD student since October 2009 and his project numerically investigates internal bone architecture and remodelling. He is well-versed in C which is the primary language in his PhD project and has good working knowledge in Fortran and C++.

Starting as a timid computer programmer only with little experience in C++, he first learnt to use Fortran-based API for commercial finite element software Ansys for his bone remodelling and optimisation algorithms. Last year, he took on the challenge of modifying my existing C code and coding his own three-dimensional structural optimisation. This is not an easy task as the previous code is not written to be friendly to other programmers and Chris was new to C. He has had to resolve highly complex geometry issues in addition to the numerical stability issues and interface with several dynamic and static numerical libraries. He has exceeded my expectation in this challenging task and his PhD transfer examiner (who had known him through his undergraduate years at Bath) was astonished by his growth and achievements.

As the project is moving onto complex three-dimensional iterative analysis and optimisation with nonlinearity, the computational cost is building up exponentially. We found that the proper treatment of nonlinearity is realistically impossible without parallel computing. We have identified elements of the algorithm that may be parallelised and we believe this will dramatically reduce the modelling time. Thus parallel computing will be a critical enabling element in his research. Chris will be able to make a highly significant impact in the research field by attending this course and learning about parallel computing.

I would describe Chris as a sponge. He is able to simply pick up new computational skills and apply them logically, carefully and thoroughly. He is particularly good at learning and using new knowledge creatively. I am still amazed by his bright intellect and focus, which is often hidden behind his shy and modest exterior. Chris has the strongest potential as a researcher in computational engineering amongst all my 12 PhD students on computational projects and I believe he and his project will greatly benefit from attending this course.

I therefore, recommend Chris Brampton most strongly for this course. Should you wish to engage in a further discussion, please do not hesitate to contact me.

Yours sincerely,

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