



## UNIVERSITY OF BIRMINGHAM

Department of Mechanical  
Engineering  
University of Birmingham  
Edgbaston  
Birmingham  
B15 2TT

Telephone: 0121 414 5159  
E-mail: k.e.a.essa@bham.ac.uk

18 July 2024

Dear Sir,

Alexander Dawes joined the MEng Mechanical Engineering programme at the University of Birmingham in September 2020. He completed his final year project under my supervision on the utilisation of artificial intelligence for designing and optimisation of lattice structures fabricated by laser powder bed fusion technology. He achieved 82% in his project and graduated in 2024 with first class honour. The output of his project will be published as a research article in Q1 international journal by the end of this year. He also won two prizes from the School of Engineering for his excellent academic achievements.

Alexander Dawes has been an excellent student who is enthusiastic about engineering. He is bright and articulate and has an excellent work ethic. It was a real pleasure working with him. He has all the skills to work as Mechanical Design Engineer.

Yours faithfully,

Professor Khamis Essa  
Professor of Digital Manufacturing  
School of Engineering  
University of Birmingham