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Letter of Reference for Academic Contribution in Postgraduate Cyber Security Research

06 November 2024

To Whom It May Concern,

It is with great pleasure that I endorse Harihara Sudhan Shanmugam (known to me as Hari) for his excellent academic achievements in his postgraduate studies, whom I have known since September 2021, when he began his Master of Science in Cyber Security postgraduate degree program at Buckinghamshire New University (BNU).
During this time, I served as both his primary industrial mentor in the field of software engineering, cybersecurity, and digital technology specialising in programming in python and secure software development practices, and as a Senior Lecturer in Computing at BNU. This dual role allowed me to provide him with valuable insights into the cyber security sector while guiding him through his dissertation academic research on "Implementing Robust IT Security Policies in Higher Education."

From his time as a dedicated student to his current position as a skilled information technology professional and crucial team member of our system development team, I have had the privilege of witnessing Hari's growth into a talented information technology professional who consistently applies his deep insights and technical ability to his work.

Referee's Professional Background

I've worked as a computer science educator in Higher Education for over ten years, with experience of working with Buckinghamshire New University, Oxford University and Cardiff University. My PhD in Computer Science Education Research (CSER) was supervised by Dr Richard Mather (Oxon) and examined by Professor Roger Dalrymple (Oxon). My continuing research investigates the impact of GenAI on teaching and learning, and the effect of authentic assessment and instant messaging on work-based learning on engagement and effective feedback. Furthermore, I am presently engaged in cross-disciplinary research by applying artificial intelligence to the sustainability of the global denim industry and have also submitted a grant to Oxford University's Centre for Teaching and Learning (CTL) which intends to measure the utility of GenAI for generating materials to support the diverse needs of lifelong learners across a wide range of disciplines.

I also lead and influence teams of colleagues to deliver teaching at both BNU and Oxford University's Department for Continuing Education (OUDCE) and I support and mentor early career researchers and junior colleagues, which I am evidencing in my application for the Senior Fellowship of the Higher Education Academy (AdvanceHE). Furthermore, in January 2025, I will be working with Professor David Malan from Harvard University to deliver the famous CS50x (Introduction to Computer Science) through OUDCE.

Hari's dissertation, titled "Implementation of Robust IT Security Policy in Higher Education," critically examined the unique cybersecurity challenges faced by universities. His research tackled a prevalent misconception: viewing IT security as merely a facet of general IT functionality. One of the most crucial insights from his work was the identification of a significant gap in how IT security is perceived and managed within educational institutions. Harihara underscored the vital need to distinguish between general IT operations and specialized IT security functions, arguing that IT security requires dedicated leadership distinct from broader IT management.

Hari's academic research work emphasized the strategic importance of appointing a Chief Information Security Officer (CISO) to oversee institutional data protection and security challenges, an approach that cannot be effectively managed solely by IT operations. His rigorous research methodology included expert interviews with high-ranking officials, such as the CISO of the University of Exeter and the Director of Strategic Planning at Buckinghamshire New University, enabling him to collect in-depth, qualitative insights. This primary data allowed Harihara to create a comprehensive IT security policy framework tailored to the evolving threats in higher education, addressing both operational vulnerabilities and the need for enhanced governance.

Hari's research offers substantial contributions to cybersecurity, particularly in the context of higher education. By examining IT security governance challenges and developing a robust policy framework, his dissertation provides actionable strategies that institutions can adopt to fortify their cybersecurity posture. A distinctive aspect of his work is the clear delineation between IT operations and IT security, highlighting the necessity of specialized leadership. His work advances the argument for appointing a dedicated CISO, framing cybersecurity as an essential organizational function rather than an operational extension. Hari's insights not only fill an important gap in existing literature but also set a new standard for how educational institutions should approach cybersecurity governance.

Throughout his dissertation, Harihara demonstrated exceptional professionalism and academic rigor. His ability to integrate theoretical knowledge with practical application resulted in a policy framework that can be readily implemented in real-world contexts. Evaluated as distinction-level work, his dissertation reflects his intellectual excellence and potential as a cybersecurity researcher. Hari's dedication and strategic approach underscore his potential to influence IT security policy within higher education and beyond, positioning him as a promising thought leader in the field.

Harihara Sudhan Shanmugam demonstrated excellency in his academic research work through his dissertation work and outstanding academic performance throughout his postgraduate studies, achieving a prestigious distinction award in his Master of Science degree in Cyber Security. His core strengths in both technical and strategic modules reflect his capability and potential to make innovation and valuable contributions to the UK's digital technology field.

In conclusion, his academic achievements and mastery of cyber security concepts position him as an emerging talent and potential leader in the digital technology field. I strongly recommend him for opportunities that will allow him to continue developing and applying his expertise in the field of cyber security.

Please feel free to contact me for any further information.

Sincerely,

N. Day

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Letter of Reference, Academic Contributions

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