



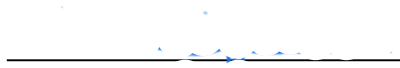
Design and Validation of an AI-Enhanced Career Guidance Framework for Sri Lankan Secondary Education

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I certify that I have read this thesis and that in my opinion it is fully adequate, in scope and in quality, as a thesis for the degree of Master of Science.



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DECLARATION

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Sri Lanka Institute of Information Technology or to any other institution for assessment for any other purpose.

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ABSTRACT

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Career guidance is a decisive factor that contributes to the educational and professional path of students, but in Sri Lanka, the practices that are currently being used are mostly manual, fragmented, and unfair. This paper forms a conceptual model of an Artificial Intelligence (AI)-driven career guidance system that provides students with personalized educational and professional advice to high school students. The study is based on a mixed-methods research framework that combines both quantitative data collected in the form of the survey of 379 educational professionals working in nine provinces and the qualitative information gathered in the form of the interviews with ten experts. Key determinants of career decision-making were identified in a quantitative analysis and found to include academic performance, aptitude, personal interests, and socio-economic background, and six interrelated dimensions were identified in a qualitative thematic analysis: human-dominated guidance, family and cultural influence, perceived fairness of AI systems, ethical and infrastructural barriers, hybrid human-AI collaboration, and equity of access. The presented framework integrates these insights into a hybrid structure, which will combine AI-based analytics with advisory and parental judgment and will be culturally sensitive and ethically valid. The model is more accurate, inclusive, and efficient because it matches student profiles with the trends of the labour-market. The results prove that AI is capable of being more of a supplement to the human knowledge and can be used to increase access to data-driven counselling in even schools with scarce resources. The research has theoretical value in that it links AI technology to the career development theory and practical in that it will provide a replicable solution to the modernization of school guidance ecosystem in Sri Lanka by policymakers and educators. It ends with implementation recommendations on data ethics, transparency and capacity building to attain equitable and evidence based educational and career decisions support.

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