



Information Systems Department  
Faculty of Computer and Information Sciences  
Mansoura University

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# **Optimizing Service Oriented Architecture to Support e-Learning with Adaptive and Intelligent Features**

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## **DISSERTATION**

Submitted in Partial Fulfillment of the Requirements for the Degree  
Doctor of Philosophy in Information Sciences

## **To**

Department of Information Systems, Faculty of Computer  
and Information Sciences, Mansoura University

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