Capstone Self-Assessment Form

Project Number:	A18-403	Supervisor:	Yi Zhang
Student Name	Zhengjie Huang	Project Title	Daily activities classification based on machine learning techniques
Student No.	13029285	Major	Exchange
Subject No.	48012	External supervisor	Meng Shen

Assessment Template			
Indicator	In undertaking your project, identify how or where or when you have delivered/demonstrated this (choice) indicator.	Self-assessment	supervisor and assessors assessment
PE1.1	*Demonstrated use of sound knowledge of the engineering discipline at a phenomenological level, mathematics, natural and/or physical sciences for systematic investigation, interpretation analysis and solution of complex problems of engineering practice* The daily activities classification model I will be developing requires a lot of IT related knowledge including programming, linear algebra, etc.	0 1 2 3 4 5	0 1 2 3 4 5
PE1.4	*Demonstrated ability to identify and critically appraise current developments, advanced technologies, emerging issues and interdisciplinary linkages, and to interpret and apply selected research literature to inform engineering applications in student's engineering discipline.* Existing methods for activity classification will be explored and analysed thoroughly in order to develop a new one. Existing research will also be used to support my research.	0 1 2 3 4 5	0 1 2 3 4 5
PE1.5	*Demonstrated knowledge of materials and resources relevant to a student's discipline and the ability to select the most appropriate materials and techniques to meet a particular objective.* Programs will be written in C to achieve desired function. Among all the existing related methods, several will be chosen considering applicability, accuracy, etc.	0 1 2 3 4 5	0 1 2 3 4 5

PE2.2	*Demonstrated ability to investigate a situation or the behaviour of a system and ascertain the relevant causes and effects* Existing systems used for activity classification will be investigated and analysed, as well as the one developed by myself.	0 1 2 3 4 5	0 1 2 3 4 5
PE2.3	*Demonstrated ability to address issues and problems that have no obvious solution, involving uncertainty, imprecise information, conflicting factors and require originality in analysis* The issues involves with daily activity classification that have been solved and not solved will both be explored and concluded in the final report.	0 1 2 3 4 5	0 1 2 3 4 5
PE2.7	*Demonstrated ability to partition a problem, process or system into manageable elements, for purposes of analysis or design; and of re-combining these to form the whole, with the integrity and performance of the overall system as the paramount consideration* The activity classification will be divided into several parts including data pre-processing, modelling algorithm, result analysis, etc.	0 1 2 3 4 5	0 1 2 3 4 5
PE2.8	*Demonstrated ability to conceptualise and define possible alternative engineering approaches and evaluate their advantages and disadvantages in terms of functionality, cost, sustainability and all other factors to deliver an optimal approach and defend the selection.* Effectiveness and accuracy of existing methods will both be evaluated to give the according improvements.	0 1 2 3 4 5	0 1 2 3 4 5
PE2.11	*Demonstrated proficiency in employing technical knowledge, design methodology, and appropriate tools and resources to design components, systems or processes to meet specified performance criteria* Relating machine learning classification methods like HMM, CRF will be used to construct the system. The system will be designed to achieve high efficiency.	0 1 2 3 4 5	0 1 2 3 4 5
PE3.2	*Demonstrated ability to locate, catalogue and use relevant information , including proficiency in accessing , systematically searching, analysing and evaluating relevant publications* Relating research on daily activity classification will be thorough explored and concluded. Detailed analysis and evaluation will also be included.	0 1 2 3 4 5	0 1 2 3 4 5

PE3.3	*Demonstrated ability to apply creative approaches to identify and develop alternative concepts and procedures and identify opportunities for improvement* A new method which utilizes machine learning methods will be developed to compete with existing methods.	0 1 2 3 4 5	0 1 2 3 4 5
PE3.4	*Demonstrated intellectual rigour and an ability to recognise limits to one's knowledge and seek advice, or undertake research, to supplement it* The research objective will be adjusted dynamically during the research according to my evaluation on the progress. Help from supervisor will be sought every week to ensure that the progress is being made.	0 1 2 3 4 5	0 1 2 3 4 5
		Total	

Student Self–Assessment Summary
Write your self-assessment (a score out of 55 as there are 11 indicators worth 5 each)

Student signature Date

Supervisor / Assessor Assessment Summary
Write your assessment (a score out of 55 as there are 11 indicators worth 5 each)

Supervisor signature Date
Assessor signature Date