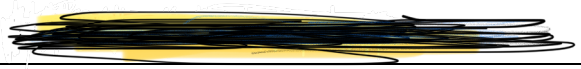
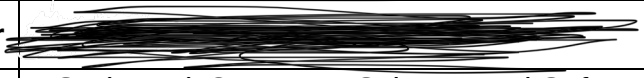
BSc Project Proposal Form

Student Name	
Student Number	
Course	BSc (Hons) Computer Science and Software Engineering
Supervisor Name	
Course Coordinator Name	Dr.Enjie Liu
Title of Project	Virtual Drawing Application for educational purposes
Abstract of the project	Virtual Drawing System is web-based application which will enable the liveware to input hand drawing gestures to the screen for the realization of the views for easy accurate gesture output. When using typical digital platform, the consistency and accuracy is low. For an example when drawing a geometric shape like a circle or a triangle, due to the inconsistency of figure movements the shape will be totally inaccurate. It is very difficult to draw a circle or a straight line in this situation. When considering these factors, the accuracy in digital signature like important things are also low. In the newly purposed system, data input will happen Picture capture, motion detection and recognition, and video image synthesis are all part of this interactive virtual drawing system. If you want to draw something, all you must do is put your finger on the screen and begin drawing. Using the Virtual Drawing System, it is possible to deduce human drawing intent and produce the equivalent geometric primitive and/or smooth B-spline curve. The Virtual Drawing System is a real-time application that allows you to draw with your hands. Compared to the existing system, this contain a full time detecting and analysing process with AI technology while an individual is on digital drawing. It will analyse every single line drawn by the individual and suggest the necessaries. Data sets are created, and points are computed for each point based on the drawing location and speed information provided by the Virtual Drawing System (VDS). To remove unnecessary points, the Virtual Drawing System use inference rules to break, for each assumed reference model, the Virtual Drawing

	System calculates the matching possible model or the letter. Inference rules in the Virtual Drawing System are utilized to determine the appropriate mode.
Project deliverables	Software/Hardware *Web Based Applications Documents • Project proposal • Thesis report • User manuals • Test cases/ Test reports
Description of your artefact	It is a shape-recognition and-generation tool in real time. Hand-drawn geometric primitives may be interpreted in terms of space and time information, allowing it to identify the purpose of the artist and produce the desired results. Using the knowledge, it has gleaned, Virtual Drawing System eliminates any points that were not drawn on purpose, finds the beginning and end points of fundamental forms, such as the letters in a handwritten message, and then makes new ones using those shapes. The aim of this project is to develop a web-based application to that would enable handwritten gestures for quick and precise production of hand-drawn movements, input them to the screen. **Objectives** • To Input hand drawing gestures to the screen for the realization. • To Gather data sets including shapes, letters of alphabets etc. • To establish connection between Deep Learning and AI. • To implement an accurate and understandable liveware inputs to Application and output through screen. • To insist on gathering information about other drawing systems.

	System Functions • Users can input any free hand drawings which will later recognize as shapes or symbols. • Users can use their primitives (hand techniques) when they draw shapes or letters that they desire. • Users can remake the shapes or letters if they make a mistake when creation of shapes or letters. • Users can Derive basic outputs by suggestions. **Benefits** • Users will be able to input free hand gestures. • Users will get suggestions on drawing basics (Shapes and Letters). • Users will get a gesture motion sensing on words or shapes. • Industrial usage of application. **Intellectual challenges** • Giving the suggestions according to the raw inputs and inspiring usage of this software. • Providing advanced segments when deriving outputs (Accurate outputs)
What methodology (structured process) will you be following to realise your artefact?	• The Virtual sketching system would be developed using a hardware-software codesign technique. • Techniques like as neural networks are employed. • Machine Learning and image processing are used in this context • Applied Artificial Intelligence • The software development methodology is Agile methodology where Agile (sometimes written Agile) practices in software development include requirements discovery and solution development by self-organizing and cross-functional teams in collaboration with their customers/end users, adaptive planning, evolutionary development, early delivery, continuous improvement, and flexible

	responses to changes in requirements, capacity, and understanding.	
How does your project relate to your degree course and build upon the units/knowledge you have studied/acquired	• Knowledge acquired from Previous Semester and creation of software package for Beliatta City Hotel • Methodologies that have been taught in this first and second year will have an impact on the development process for Virtual Drawing Systems.	
Resources	▪ Hardware Web Camera Hand gesture equipment ▪ Software HTML (Front End) Python (Back End) ▪ Databases Google Firebase	
Have you completed & submitted your ethics form?	YES	NO
If the project is a development of previous work by yourself or others, give details below. Failing to declare such previous work here may be treated as an academic offence		

Supervisor Signature: 

Student-supervisor meeting schedule:

Supervisor's name	Student's name	Meeting on the day of the week	Meeting at the time of the day
[redacted]	[redacted]	**Wednesday**	**9.30 am**

Course Coordinator Signature

After the proposal has been signed off by both the supervisor and course coordinator scan the proposal and upload on BREO with signatures. Projects that follow proposals that have not been approved may be cancelled and there will be no compensation for any time lost.

Part 2 – List of relevant resources

Fill in this section after your project proposal has been approved by your supervisor. Use Harvard referencing (see https://lrweb.beds.ac.uk/a-guide-to-referencing). Modify the list below as appropriate. This list is part of Assignment 1 and will be submitted with the Project Proposal.

1. *Books*
    a. *https://ieeexplore.ieee.org/document/8753004*
2. *Journal Papers*
    a. *https://ieeexplore.ieee.org/document/343874/metrics*
    b. *https://ieeexplore.ieee.org/document/634882*
3. *Web Sites with relevant information*
    a. *…*
4. *Relevant software*
    a. *HTML*
    b. *Phython*
5. *Relevant hardware*
    a. *…*
6. *Other*
    a. *…*