Please accomplish the following check list in order to allow for accurate marking of your assignment.

**Check list:**

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|  | **Item** | **your assignment details** | | | **Comments** |
| 1 | Names and ID numbers of Group Members | Yue Wang 12027710 | | | (maximum of 3 members in a group) |
| 2 | Operating System used for testing your codes | Win 10 | | | Note that the start-up codes only work on Windows. The required version is Windows 10 |
| 3 | Compiler used | Gcc 8.2 | | | (Note: gcc 8.2.0 is required) |
| 4 | IDE used | Visual studio | | | (e.g. SublimeText 3, ScITE) |
| 5 | Complete source codes (cpp, h files), makefile | done | | | you are required to submit the complete source codes, including the makefile, or project file (if using codeblocks, etc.) |
| 6 | Algorithm components | Fuzzy rules | | Full | Indicate ‘**full**’, if you have completed the implementation of a component of the algorithm, or ‘partial’, if you are only submitting a partial implementation. |
| Fuzzy membership functions | | Full |
| Defuzzification | | Used the default one |
| 6 | Specify the maximum time your fuzzy controller can successfully balance the pendulum, and at what initial pole angle and cart position. | Initial angle (in degrees) | 15 | | Note: the bigger the initial angle that your fuzzy controller can handle, the better. |
| Initial cart position (in meters) | x = -1 (as set in the start-up codes) | |
| Maximum balancing time (in minutes) | Infinity | |
| 7 | Experiment Results (Control surface) in Excel Worksheet | Yes | | | indicate ‘**Yes**’ or ‘**No**’ |
| 8 | Extra work (Bonus): Enhancements/Optimisations included | No | | | (e.g. successful implementation and calibration of Yamakawa’s design) |