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| **Date** | 02 June 2018 | Score : |
| **Lecturer** | Handri Santoso, Dr. Eng. |  |
| **Fac./Study Prg.** | Engineering/Mechatronics |  |
| **Semester/Year** | 06/ 2015 |  |
| **Time** | 120 minutes |  |

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| **Computer Vision** |  |

1. **Examination Conditions (completed by the lecturer with check “√”)**

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| **No.** | **Condition** | **Completed by the lecturer with** “**√**” | | **Remark (Completed by the lecturer)** |
| **Allowed** | **Not Allowed** |
| 1. | Using Open Book | **√** |  |  |
| 2 | Using Laptop | **√** |  |  |
| 3 | Using Cheat Sheet | **√** |  |  |
| 4 | Using Calculator | **√** |  | Handphone is not allowed during exam |
| 5 | Using Pencil |  | **√** |  |
| 6 | Using Pen | **√** |  |  |
| 7 | Students may not remove the staples from the exam materials. | | | |

1. **Examination Regulation**

Cheating or dishonest conduct

1. Cheating or dishonest conduct are strictly prohibited.
2. Students found cheating or showing dishonest conduct will be failed in the respective subject.
3. Students have to retake the course for the respective subject completely.
4. The invigilator has the right to judge cheating or dishonest conduct based upon objective evidence.

Leaving the room during the exam

1. Leaving the exam to go to the toilet must be avoided as much as possible.
2. In case it happens, the invigilator must escort the student to the toilet.
3. Students may leave the room if they have finished the exam without disturbing others.

Dress code

1. Students have to dress appropriately.
2. Sandals, short pants or inappropriate dress are not allowed in the examination room.

This examination material has been verified by:

Date:

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1. Generate 1. 1,000 random numbers *ri* between 0 and 1. Decide on a bin size and then take a histogram of 1/*ri*.
   1. Are there similar numbers of entries (i.e., within a factor of ±10) in each histogram bin?
   2. Propose a way of dealing with distributions that are highly nonlinear so that each bin has, within a factor of 10, the same amount of data.
2. Collect a flat hand gesture (static pose) and of random backgrounds. Collect several hundred images and then train the Haar classifier to detect this gesture. Test the classifier in real time and estimate its detection rate.



1. By using diabetes dataset (you can use the syntax diabetesdata = datasets.load\_diabetes() in your program), evaluate by using KNN and Kmean . Show it in figure
2. By using face dataset (<https://www.cs.auckland.ac.nz/~m.rezaei/Tutorials/Haar-Training.zip>), Train the SVM by using Linear and RBF Kernel Function. Evaluate the result of detection rate