Applied Image Processing

2 units (selection)

Kenji Terada · Professor / Information Science, Information Science and Intelligent Systems, Systems Innovation Engineering

Stephen Karungaru·Githinji · Associate Professor / Intelligent Systems, Information Science and Intelligent Systems, Systems Innovation Engineering

Target⟩ This class provides the skills and the knowledge of basic and advanced image processing in the industrial field and the robot field.

Outline⟩ This class introduces the techniques and applications of image processing necessary for control system and inspection system. This class explains the hardware and software about image I/O systems, high-speed image processing methods and robot vision.

Style⟩ Lecture

Keyword⟩ *image processing, pattern recognition, computer vision*

Fundamental Lecture⟩ "**Image Processing**"(1.0), "**Pattern Recognition**"(1.0)

Goal⟩ 工業用画像処理システムを構築する際に必要な実用的な技術とロボットの視覚技術等についての知識の習得

Schedule⟩
1. concept of industrial image processing
2. image acquisition system
3. principle of lens and light source device
4. hardware of image processing(1)
5. hardware of image processing(2)
6. three dimensional image feature extraction(1)
7. three dimensional image feature extraction(2)
8. shift and shape recognition(1)
9. shift and shape recognition(2)
10. inspection system(1)
11. inspection system(2)
12. robot vision
13. mobile robot
14. micro robot
15. trend of robotics
16. Report

Evaluation Criteria⟩ Result is decided by attendance(20%) and reports(80%).

Contents⟩ http://cms.db.tokushima-u.ac.jp/cgi-bin/toURL?EID=216595

Student⟩ Able to be taken by only specified class(es)

Contact⟩

⇒ Terada (Dr.802, +81-88-656-7499, terada@is.tokushima-u.ac.jp) Mail (Office Hour: 月，水曜日 15:00~ 17:00(年度ごとに学科の掲示を参照すること))

Note⟩
◇ 授業を受ける際には，2 時間の授業時間毎に 2 時間の予習と 2 時間の復習をしたうえで授業を受けることが，授業の理解と単位取得のために必要である．
◇ 授業計画 1~ 15 は，各講義の最後に行なわれる演習および最終試験により達成度評価を行なう．