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| Course Name [科目名] | Pattern Recognition and Machine Learning |
| Instructor Name [教員] | Seiji Hotta, Katsuhide Fujita |
| Course Credits [単位数] |  |
| Course Overview [概要] | Pattern recognition classifies, identifies or recognizes symbols, structures or any type of information represented, conveyed or even hidden in a set of signals which are redundant and often noisy. It is theoretically and scientifically important to learn human abilities of pattern recognition and practically important to realize smooth human machine interaction.  |
| Course Key Words [キーワード] | Feature extraction, Discriminant functions, Statistical methods, Clustering, Syntactic methods, Machine Learning, Text Mining, Artificial Intelligence |
| Academic Goal [目標] | Understanding basic mathematics, methods and algorithms. |
| Course Schedule [授業内容] | What are patterns, what is pattern recognition?Findings from Pathology, Neurophysiology and Cognitive SciencePattern Recognition by ComputersBasics of StatisticsStatistical Methods and Syntactic MethodsFeature Extraction and Normalization Discriminant FunctionsClustering and Prototype LearningNeural Networks and Machine LearningPractice of Pattern RecognitionText Mining |
| Textbooks, References, and Supplementary Materials[テキスト、参考書、その他] | Duda, Hart, Stork: Pattern Classification, John Wiley & Sons, Inc.Bishop, Pattern Recognition and Machine Learning, SpringerTexts and simple codes will be provided via a website. |
| Grading Philosophy(Percentage / Criteria / Methodology)[成績評価の方法] | Attendance (10%), Home works (30%), Examinations (60%) |
| Other(i.e. Expectations on Classroom Conduct and Decorum etc.)[その他] |  |