



Intelligent Pattern Recognition and Applications

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ABSTRACT

This tutorial deals with advanced concepts of Artificial Intelligence (AI) and Pattern Recognition (PR), and their applications to solving real life problems including biometrics applications. It basically covers the following topics:

- (1) Overview of Pattern Recognition (PR)
- (2) Overview of Artificial Intelligence (AI)
- (3) The Relation Between PR and AI, with Some illustrations
- (4) Analysis and Learning: Pattern Recognition Concept : Foundation and theories
- (5) Importance of Ambiguity, and its Applications: Theory and applications
- (6) An Overall Interactive Intelligent Pattern Recognition (IPR) System
- (7) Concepts of Syntax, Semantics, and Pragmatics: Theories and Applications
- (8) Importance of Ambiguity, and its Applications: Theory and Applications
- (9) How it works: IPR and Applications to Solving Real Life Problems including Biometrics and Face Recognition
- (10) Some More Illustrations, Discussions and Future Directions

OBJECTIVES

This course will enable you to:

- Understand the concept and problem of AI
- Understand the concept and problem of PR
- Understand the concept and Intelligent Pattern Recognition IPR, PR using AI technologies
- Understand the concept of Learning, Ambiguity and IPR
- Apply the IPR for solving real life problems, including biometrics
- Design and use robustness metrics to quantify the robustness of a particular resource allocation for a given computational environment
- Incorporate robustness into the design of both static (off-line) and dynamic (on-line) resource allocation heuristics

INTENDED AUDIENCE

This course is intended for faculty, engineers, scientists, and graduate students who want to learn about Intelligent Pattern Recognition IPR, some fundamental principles and their applications to solving real life problems in science, engineering, medical, and many other fields.

BIOGRAPHY OF INSTRUCTOR

Prof. Patrick Wang, PhD. *IAPR Fellow*, is Tenured Full Professor, Northeastern University, USA, iCORE (Informatics Circle of Research Excellence) Visiting Professor, University of Calgary, Canada, Otto-Von-Guericke Distinguished Guest Professor, Magdeburg University, Germany, as well as honorary advisory professor of several key universities in China, including Sichuan University, Xiamen University, East China Normal University, Shanghai, and Guangxi Normal University, Guilin. Dr. Wang has published over 21 books, 120 technical papers, 3 USA/European Patents, in PR/AI/Imaging, and is currently Editor-in-Chief of ***IJPRAI (International Journal of Pattern Recognition and Artificial Intelligence)***, and Book Series of ***MPAI***, WSP.

For more information, please refer to: www.ccs.neu.edu/home/pwang, pwang@ccs.neu.edu, patwang@mit.edu

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