



FACULTY OF INFORMATION TECHNOLOGY

Artificial Intelligence Fundamentals (NM TTNT)

Semester 1, 2021/2022

Information

- ▶ Name:
Artificial Intelligence
Fundamentals
- ▶ Credit points: 4
- ▶ Lectures: 45 h
- ▶ Labs: 30 h

- ▶ Name:
Van Du Nguyen, Ph.D.
- ▶ Email:
nvdu@hcmuaf.edu.vn

FB Group: <https://bit.ly/2FBDzQb>

Course

Lecturer

Content

- ▶ Chapter 1. Introduction to Artificial Intelligence
- ▶ Chapter 2. Intelligent Agents
- ▶ Chapter 3. Uninformed Search
- ▶ Chapter 4. Informed Search
- ▶ Chapter 5. Game
- ▶ Chapter 6. Logical Agents
- ▶ Chapter 7. First-Order Logic
- ▶ Chapter 8. Learning Agents

Assessment

- ▶ Labs: 10%
- ▶ Project: 30% (10%, 20%)
- ▶ Final exam: 60% (writing test)

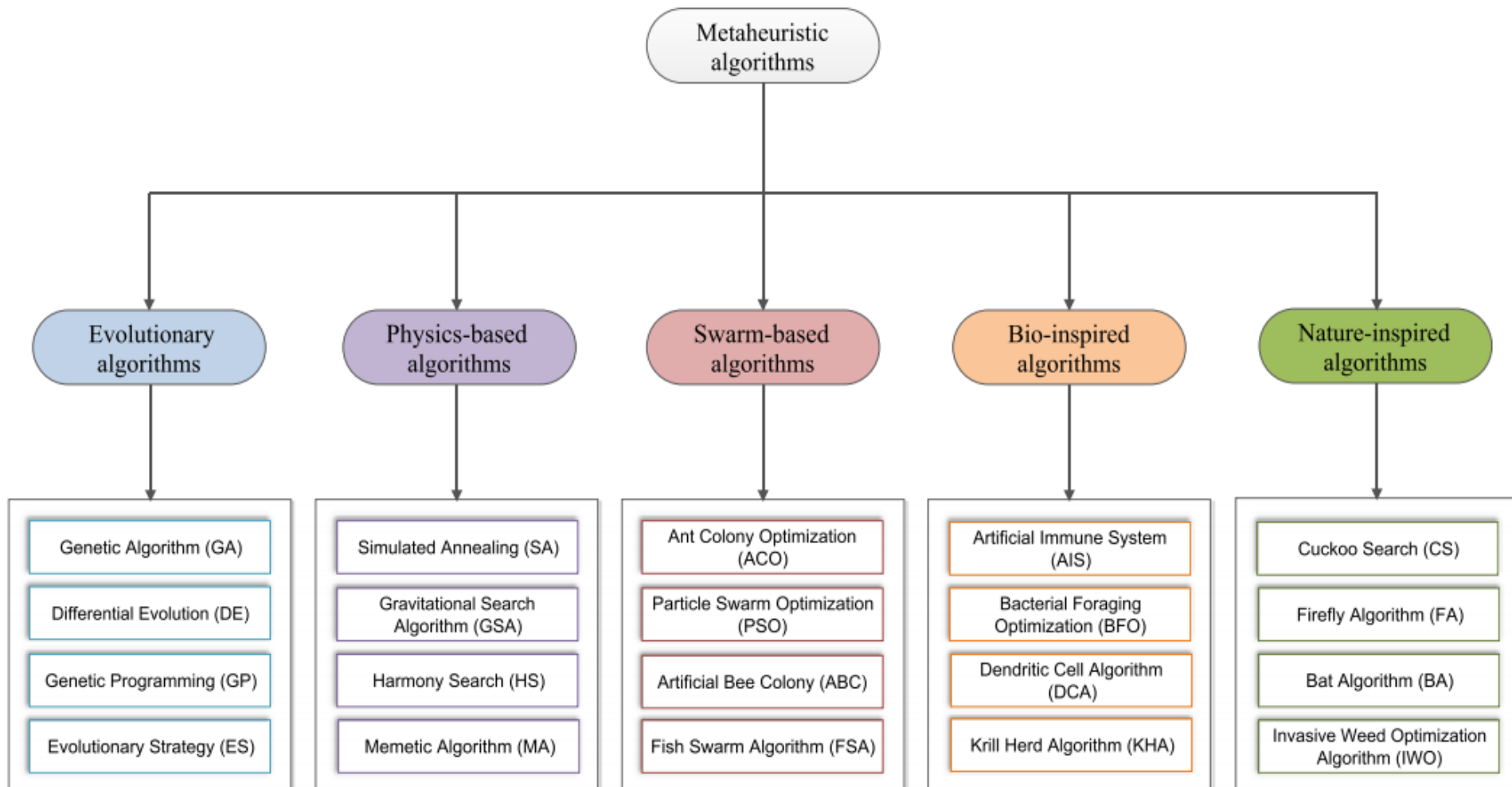
Assessment: Labs

- ▶ Homework assignments:
 - 10% of the grade,
 - Programming assignments.
- ▶ Collaborations:
 - Individual homework assignments
- ▶ Programming language:
 - Java

Assessment: Project

- ▶ ~4 students / group
- ▶ Desktop / Web / mobile applications
- ▶ Scope: Applying an AI techniques (API, algorithms) to solve a specific problem

Project Suggestion: metaheuristic algorithms



Spotted Heyna Optimizer(SHO)

Project Suggestion: metaheuristic algorithms (cont.)

- ▶ Scheduling tasks:
 - examination,
 - Timetable for university,
 - Timetable for highschool,
 - ...
- ▶ knapsack problems
- ▶ Multi-choice tests generation
- ▶ Comparative study on applications of selected algorithms to GAME

Project Suggestion (cont.)

- ▶ Using API (**OpenCV**, **Yolo**, **Keras**, ...) for recognition tasks
 - Face recognition
 - Object recognition
 - Fingerprint recognition
 - Mathematical expression recognition
 - Handwritten recognition
 - ...
- ▶ Using **Sphinx** for voice recognition tasks
- ▶ Other APIs for recognition tasks

Assessment: Project (cont.)

► Deadlines:

- Project proposal: **by 10/10/2021**
 - including (problem statement, algorithm/API)
 - Submission via email lab.dunguyen@gmail.com (subject AI 2021)
 - Project proposal acceptance: **by 20/10/2021**
- Presentation: TBA
 - Presentation form: ppt file
 - 20'/group (15' for presentation + 5' for Q&A)

Assessment: Final exam

- ▶ 60% of the grade
- ▶ All course contents are possible
- ▶ Writing test

Material

▶ Course textbook:

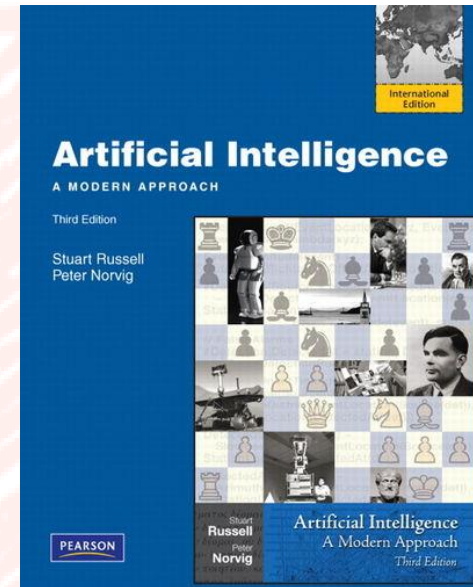
- S. Russell and P. Norvig, *Artificial Intelligence: A Modern Approach* Third Edition, Prentice Hall, 2010.

<https://bit.ly/2S9nNwm>

▶ Other textbooks:

- E. Charniak and D. McDermott, *Introduction to Artificial Intelligence*, 1999, Second Edition.
- J. Finlay and A. Dix, *Introduction to Artificial Intelligence*, UCL Press Limited, 1997.
- N. Forbes, *Imitation of Life: How Biology is Inspiring Computing*, Cambridge MA, MIT Press, 2004.
- M. Sipper, *Machine Nature: The Coming of Bio-Inspired Computing*, Cambridge MA, MIT Press, 2002. (ISBN 0071387048).

◦ ...



Course textbook: AIMA

<http://aima.cs.berkeley.edu/>

<http://norvig.com/gsoc-ideas.html>

AIMA Home ▴

Acknowledgements

Code

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Courses

Editions

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Pseudocode

Reviews

Artificial Intelligence: A Modern Approach



(Fourth edition, 2020)

by Stuart Russell and Peter Norvig

The [leading textbook](#) in Artificial Intelligence, used in [1500](#) schools in [135](#) countries and regions.

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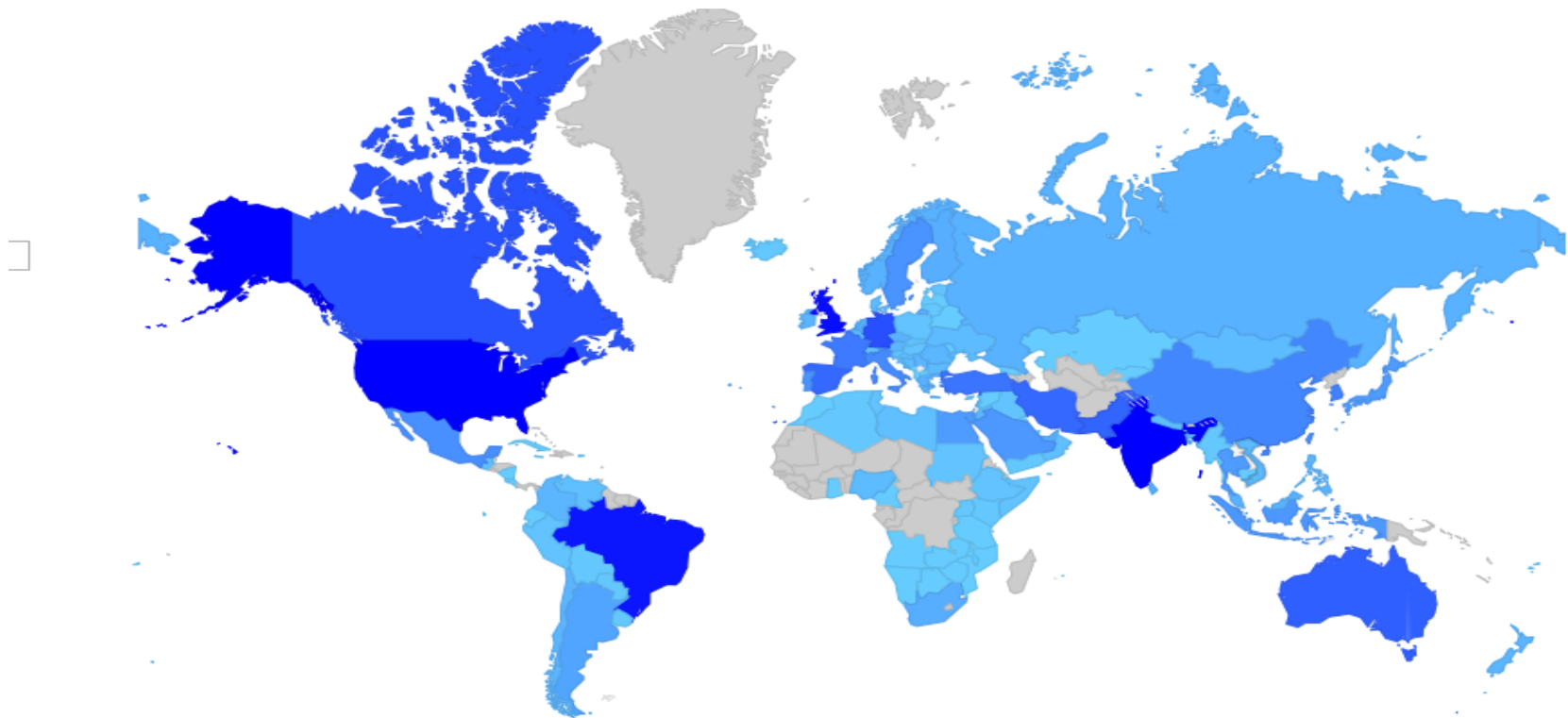
[Code \(website\)](#); [Pseudocode \(pdf\)](#)



Course textbook: AIMA (cont.)

1408 Schools Worldwide That Have Adopted AIMA

Artificial Intelligence: A Modern Approach has been adopted for use by at least **1408 schools** in **128 countries** or regions. Please let peter@norvig.com know of any we missed. Hover over a country in the map or word cloud below to see the number of adoptions. Each @ after a school name links to a course.



Education

- ▶ **AI:**
 - FPT University (2019)
 - Hanoi University of Science & Technology (2019)
 - University of Technology and Education Ho Chi Minh city (2019)
 - Industrial University of Ho Chi Minh City (2020)
 - ...

- ▶ **Data Science:**
 - Hanoi University of Science & Technology (2019)
 - Ho Chi Minh City University of Science (2020)
 - International University – VNU–HCM (2020)
 - University of Information Technology (2020)
 - Banking University HCM (2020)
 - ...



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