Course Outline

Course Code : DBA4813
Course Title : AI Strategies in Business
Class Date : From 13/8/2024   To 15/11/2024
Semester : Semester 1, Academic Year 2024/2025
Faculty : Adjunct Assistant Professor Joel Li, PhD
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Overview

Since OpenAI launched ChatGPT in November 2022, it quickly gained traction, reaching 1M users in only 5 days. By January 2023, it surpassed the 100 million user mark, making it the fastest growing platform ever.

Artificial Intelligence (AI) is a revolutionizing technology which will not only transform multiple industries, but accelerate the next era of innovation and efficiency. ChatGPT is just the beginning of what is possible.

Technology companies such as Microsoft, Google and Meta have realized how critical it is to put AI at the heart of their operations. They have begun incorporating AI into their products and have transformed their processes in order to harness data, develop structured and automated ways to analyse information and make better operational decisions.

In this course, students will learn how businesses are using AI to make better decisions, improve operational processes and enhance products/services. Topics include fundamental AI concepts, cutting-edge AI algorithms, Generative AI fundamentals and use cases, AI applications in industry, challenges of AI in the real world, the ethical, legal and privacy issues surrounding the use of AI (e.g. ChatGPT), how humans and machines can work together to realize AI's full potential, how to drive AI adoption within companies and identify new business opportunities with AI.

Course Objectives

This course aims to develop students' ability to understand and make better business decisions in the age of AI.

From this course, students will be able to formulate AI strategies, implement AI algorithms to extract actionable insights from data, use ChatGPT to enhance productivity and setup successful AI pilots. They will also be able to identify AI startup opportunities and how to become valuable intermediaries between data scientists and senior management.

Assessment

Assessment Components	Weightage
(i) Class participation:	10%
(ii) Tests: - Mid-term Test (20%) - Final Test (20%)	40%
(iii) Class assignments	20%
(v) Group project: - Project Report (20%) - Project Presentation (10%)	30%

Schedule and Outline

Lesson/ Week	Date	Session (lesson summary or outline / learning objectives / preparation / cases & assignments / follow-up readings & resources)
1	13 Aug 2024	Course introduction, understand how AI can help businesses make better decisions, improve operational processes, enhance products and services
2	20 Aug 2024	Learn about the basics of AI: Supervised learning, Unsupervised learning, Regression, Classification and Anomaly Detection
3	27 Aug 2024	Cutting-edge algorithms: Neural Network, Deep Learning and Reinforcement Learning algorithms
4	3 Sep 2024	Generative AI: ChatGPT/GPT-4, Large Language Models, Transformers, Foundation models, DALL-E and Stable Diffusion
5	10 Sep 2024	Learn about applications of AI (including Generative AI) in various industries: E-commerce, Industry 4.0, Finance, Automotive, Energy, Search, Social Media, etc.
6	17 Sep 2024	Understand the issues and implications of data scarcity, algorithm biases, inaccurate data labelling, ethical, legal and privacy issues and how to avoid their associated pitfalls
7	1 Oct 2024	Mid-term Test
8	8 Oct 2024	Learn how jobs are going to look like in the future with AI (including Generative AI) transforming work. Understand where the partnership between humans and machines is essential in realizing the full potential of AI
9	15 Oct 2024	Learn of some ways to set up and execute AI pilots that can generate significant success and value such that it serves as the first step to setting up company-wide AI strategies
10	22 Oct 2024	Learn how to sell AI solutions to stakeholders within organizations and become the intermediary between data scientists and senior management
11	29 Oct 2024	Learn how to identify new business and startup opportunities within the AI space
12	5 Nov 2024	Project presentation
13	12 Nov 2024	Final Test

General Guide & Reading (e.g. Case preparation guide, project report guide, main textbook & supplementary materials, etc)

Illustrative Reading List:	
(a) Compulsory reading:	Pang-Ning Tan, Michael Steinbach, Vipin Kumar, "Introduction to Data Mining", 2nd Edition, Pearson, 2021
(b) Supplementary reading:	Christopher Bishop, "Pattern Recognition and Machine Learning", Springer, 2011

	Marco Iansiti, Karim R. Lakhani, "Competing in the Age of AI: Strategy and Leadership When Algorithms and Networks Run the World", Harvard Business Review Press, 2020
	Thomas H. Davenport, Erik Brynjolfsson, Andrew McAfee, H. James Wilson, "Artificial Intelligence: The Insights You Need from Harvard Business Review (HBR Insights)", Harvard Business Review Press, 2019
	Kai-Fu Lee, "AI SuperPowers: China, Silicon Valley, and the New World Order", Harper Business, 1st Edition, 2018

Academic Honesty & Plagiarism

Academic integrity and honesty is essential for the pursuit and acquisition of knowledge. The University and School expect every student to uphold academic integrity & honesty at all times. Academic dishonesty is any misrepresentation with the intent to deceive, or failure to acknowledge the source, or falsification of information, or inaccuracy of statements, or cheating at examinations/tests, or inappropriate use of resources.

Plagiarism is 'the practice of taking someone else's work or ideas and passing them off as one's own' (The New Oxford Dictionary of English). The University and School will not condone plagiarism. Students should adopt this rule - You have the obligation to make clear to the assessor which is your own work, and which is the work of others. Otherwise, your assessor is entitled to assume that everything being presented for assessment is being presented as entirely your own work. This is a minimum standard. In case of any doubts, you should consult your instructor.

Additional guidance is available at:
- Administrative Policies
- http://www.nus.edu.sg/registrar/administrative-policies-procedures/acceptance-record#NUSCodeofStudentConduct
- http://nus.edu.sg/osa/resources/code-of-student-conduct