

2022年3月版



国际健康促进协会  
杭州安提雅健康咨询有限公司  
国（境）外医疗交流项目



专注为医学生  
医学院教师  
医务及护理人员  
提供卓越的国（境）外医疗交流项目

课程 | 在线课程  
模式 | 实地交流

# 新加坡国立大学医学在线课程——人工智能及其在医疗保健和护理中的应用

## What is AI and why is it important in Healthcare and Nursing

AI approaches are increasingly emerging as a key technological enabler in healthcare. Transformational uses of AI have been applied across the entire healthcare spectrum from medical operations, diagnostics, prognosis, through treatment and research. These approaches have had a direct impact on the delivery of healthcare and patient outcomes.

The Nursing profession plays a crucial role in the adoption of AI platforms and technologies. From identifying opportunities, ensuring adoption, providing front-line feedback, nursing plays a vital role in impactful AI. Understanding the strengths (and limitations) of AI empowers the next generation of Nursing professionals to maximize the use of AI and ensure the best treatments and outcomes for the patients under their care.

人工智能方法正日益成为医疗保健领域的一个关键技术推动者。人工智能的转型用途已经应用于整个医疗保健领域，从医疗操作、诊断、预后，再到治疗和研究。这些方法对医疗保健和患者的治疗结果产生了直接影响。护理专业在人工智能平台和技术的采用中起着至关重要的作用。从识别机会、确保采用、提供一线反馈等，护理在有效的人工智能中发挥着至关重要的作用。了解人工智能的优势（和局限性）使下一代护理专业人员能够最大限度地使用人工智能，并确保对其护理的患者的最佳治疗和结果。

## Learning Objective :

在这些讲座的过程中，参与者将了解人工智能到底是什么以及它背后的基本原理。从这些基础知识中，他们将提供当前医疗保健领域的概述，人工智能应用的主要领域，以及最终可行的方法来推动人工智能应用和在工作场所的采用。

## Learning outcome:

了解人工智能及其应用，参与者将具备基本技能和知识，使他们能够确定通过人工智能改善患者健康的健康结果。本课程还将为学员提供坚实的基础，让他们在培训和职业生涯的过程中进一步发展人工智能技能。

# 新加坡国立大学医学在线课程-人工智能及其在医疗保健和护理中的应用

第一周	第二周	第三周	第四周	第五周	第六周
Lecture1: Introduction to AI 人工智能简介	AI principles 人工智能原理	Overview AI in Healthcare and Nursing 医疗保健和护理中的人工智能概述	Applications of AI in Healthcare and Nursing 人工智能在医疗保健和护理中的应用	Practical AI in Healthcare and Nursing 医疗保健和护理中的实用人工智能	Final Project Presentation 最终项目演示
注：具体课程以实际为准，最终解释权归杭州安提雅健康咨询有限公司所有					

**课程时间：**2022年7月16日（星期六）-8月20日（星期六）为期六周 注：未达35人不开班

**授课时长：**每节2小时讲座，辅导课1小时

**授课形式：**zoom在线授课（讲座+辅导课+小组课题演示）

**参加人员：**全日制医学/护理专业本科及研究生

**授课语言：**英语（对英语成绩不作强制要求，可根据自身英语水平进行项目选择）

**课程证书：**由新加坡国立大学颁发结业证书；根据学员的出勤率、课程作业和结业汇报的完成情况，教授将出具成绩签字报告单；优胜小组获得优秀学员证明

**课程费用：**3,800元人民币（项目原价4,800元，本协会提供奖学金每人1,000元）

第1周到第5周：

- 每周讲座/研讨会的数量和持续时间：每周一次2小时的讲座
- 每周辅导次数和持续时间：共5次，每次1小时的

第6周：

- 3小时小组结业报告

每周预计工作量分布：

- 学生每周在课外作业/项目工作上应花费的小时数：2小时
- 学生应在课外阅读/准备时间上花费的小时数：2小时
- 学生最低总工作量（第1至5周）：4小时

# Programme Content

## Lecture1: Introduction to AI

- Introduction toAI
- A brief review on AIhistory
- AI Applications: State of theart
- AI, Machine Learning, and Deep Learning
- Restrictions andconstraints
- Future ofAIAssignment anddiscussion
- Outline of nextsteps

Week 1

## Lecture 2: AIprinciples

- AI approaches
- Search andheuristics
- Optimization
- Logic
- Machine learning
- Deep learning
- Assignment anddiscussion
- Outline of nextsteps

Week 2

## Programme Content

### Lecture 3: Overview AI in Healthcare and Nursing

Week 3

- Introduction - Example
- Learning Objectives for this course revisited
- Learning objectives for today
- Historical Context - How we got there?
- Current State of the Art - The Big Picture
- Ethics and Compliance
- Outline of next steps
- Take Homes / Today's learning Objectives
- Reading List / Homework
- Real World Patient Impact
- Q & A

### Lecture 4: Applications of AI in Healthcare and Nursing

Week 4

- Last time Recap
- Introduction - Example
- Learning objectives for today
- AI for Medical Operations
- AI for Medical Diagnosis
- AI for Medical Prognosis
- AI for Medical Treatment
- AI for Medical Research
- Outline of next steps
- Take Homes / Today's learning Objectives
- Reading List / Homework
- Real World Patient Impact
- Q & A

## Programme Content

### Lecture 5: Practical AI in Healthcare and Nursing

Week 5

- Last time Recap
- Introduction - Example
- Learning objectives for today
- Identifying Opportunities
- Building an AI Project
- Building the Model / Application
- Proving it works
- Driving Adoption
- Communicating
- Monitoring and Improvement
- Take Homes / Today's learning Objectives
- Reading List / Homework
- Real World Patient Impact
- Q & A

### Final Project Presentation

Week 6

- Introduction: Purpose, format and Roles
- Divide into Teams of 8. For each team:
  - Team Verbal Presentation
  - Team Q&A
- Wrap up and Team feedback session

## Programme Structure

From week 1 to 5:

- No. & Duration of Lecture/Seminar: 5 sessions, 2 hours per session
- No. & Duration of Tutorial: 5 sessions, 1 hour per session
- No. & Duration of Lecture/Seminar: one session, 3 hours per session



## Dr. Peter Condrón

Peter Condrón is a Data Science and IT leader with over 21 years' experience in the Pharmaceutical and Biotechnology industry. An expert in the analysis and transformation of healthcare organizations, Peter has driven the creation of world-class data-driven organizations and high performing teams in large multi-national organizations such as Novartis, Eli Lilly and Merck, as well as Singaporean based research agencies (A\*Star) and local startups

Peter康德隆是数据科学和信息技术领域的领导者，在制药和生物技术行业拥有超过21年的经验。作为医疗保健组织分析和转型方面的专家，彼得推动了诺华、礼来和默克等大型跨国组织，以及新加坡的研究机构(A\*Star)和本地初创公司





## Dr Amirhassan Monajemi

Amir is a Senior Lecturer with the School of Computing, National University of Singapore (NUS). Before joining the NUS, he was with the Faculty of Computer Engineering, University of Isfahan, Iran, where he was serving as a professor of AI, Machine Learning, and Data Science. He has taught artificial intelligence courses, including AI, Advanced AI, Expert Systems, Decision Support Systems, Neural Networks, and Cognitive Science since 2005 at both undergraduate and postgraduate levels.

阿米尔是新加坡国立大学(NUS)计算机学院的高级讲师。在加入新加坡国立大学之前，他曾在伊朗伊斯法罕大学计算机工程学院工作，在那里他担任人工智能、机器学习和数据科学的教授。自2005年以来，他一直在本科和研究生阶段教授人工智能课程，包括人工智能、高级人工智能、专家系统、决策支持系统、神经网络和认知科学。







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