

**NUS Youth Programme
FUTURE SERIES****Summer/Winter Programme
for Aspiring Youth Age 15 - 18**

NUS YOUTH PROGRAMME FUTURE SERIES DECEMBER 2025

Introduction to AI and Generative AI in Healthcare

Course Overview

Artificial Intelligence (AI) is no longer the technology of tomorrow—it is rapidly transforming the world we live in today, including how we diagnose diseases, deliver treatments, and design healthcare systems. From medical imaging to personalised medicine, AI is reshaping the future of public health in ways that are both exciting and complex. Understanding how these technologies work, and their impact on society, is essential for the next generation of changemakers.

This programme is specially curated for pre-university and high school students in Grades 10-12, to provide comprehensive introduction to the principles and practices of Artificial Intelligence (AI) and Generative AI (GenAI). More than just learning about the technology, participants will explore how digital innovation intersects with ethics, medical practice, and social responsibility. Throughout the course, participants will examine topics such as machine learning, neural networks, and large language models through interactive lessons and real-life case studies. The course also includes opportunities for students to work in teams to discuss and present innovative ideas for using AI in healthcare. It comprises five 3-hour sessions, combining faculty-led seminars, collaborative learning, and a final group project to showcase creative thinking and application.

At the end of the course, the participants will:

- Describe key concepts and technologies in Artificial Intelligence and Generative AI, including how neural networks, large language models, and generative models operate.
- Apply AI tools and techniques to identify opportunities to explore innovative solution to solve health-care problems.



**NUS Youth Programme
FUTURE SERIES****Summer/Winter Programme
for Aspiring Youth Age 15 - 18**

NUS YOUTH PROGRAMME FUTURE SERIES DECEMBER 2025

Introduction to AI and Generative AI in Healthcare

Programme Date

16 - 20 December 2025

Who Should Attend

Pre-University and high school students in Grade 10 - 12, with an interest in exploring AI and its applications. The course is not restricted to STEM students, as the material will cover the basics of AI/Machine Learning through advanced applications. Applicants shall be born on and before 31 December 2010 to be eligible.

Prerequisites

There is no subject pre-requisites for this course. High school and pre-university students from Arts, Humanities, Business and STEM stream are all welcomed to apply.

Participants are expected to be able to communicate fluently in English, as the courses are conducted in English.

NUS Youth Programme FUTURE SERIES

Summer/Winter Programme
for Aspiring Youth Age 15 - 18



NUS YOUTH PROGRAMME FUTURE SERIES DECEMBER 2025

Introduction to AI and Generative AI in Healthcare

Schedule

16 Dec 2025	Session 1	3 hrs	Foundations of AI
	Campus Tour	3 hrs	Explore NUS student life with our Student Ambassadors
17 Dec 2025	Session 2	3 hrs	Machine Learning and Deep Learning
	Afternoon	3 hrs	Self-facilitated study time
18 Dec 2025	Session 3	3 hrs	AI Ethics and Responsible AI
	Afternoon	3 hrs	Complimentary Industrial Learning Journey
19 Dec 2025	Session 4	3 hrs	Group Project Development and Coaching
	Afternoon	3 hrs	Self-facilitated study time
20 Dec 2025	Session 5	3 hrs	Project Presentations

**Please note that the proposed programme timetable is subjected to changes with prior notice.*



youth@nus.edu.sg



youth.nus.edu.sg