

2025 Nanyang Technological University CAVR Winter School

Introduction

A research-intensive university in Singapore, **Nanyang Technological University (NTU)** is world's TOP Young University in both 2024 Time Higher Education (THE) and 2024 QS Rankings. NTU was ranked at 4th position In THE Asian University Rankings, and at 26th position in QS World University Ranking with a total of 10 (33) subjects ranked among the 2024 QS top 10 (50) in the world. its main campus is often listed as one of the top ten most beautiful campuses in the world. NTU has 33,000 undergraduate and graduate students distributed across the College of Engineering, Nanyang Business School, College of Data Science and Computing, College of Science, College of Humanities, Arts and Social Sciences, and Graduate School.

About The Centre for Augmented and Virtual Reality (CAVR)

NTU's CAVR is a world-class academic center for interdisciplinary, cross-research, and application development in Singapore. A top-notch laboratory with advanced technical equipment, CAVR has close and in-depth cooperations with industry and international research institutions. Over the years, it hosted many international conferences including the prestigious IEEE Mixed and Augmented Reality Conference ISMAR'2022 in Singapore. Its main research includes but is not limited to Virtual Reality (VR) & Augmented Reality (AR), Artificial Intelligence (AI), Robotics, 3D Printing. CAVR is also an important training base for global talents to perform cutting-edge research and innovation.

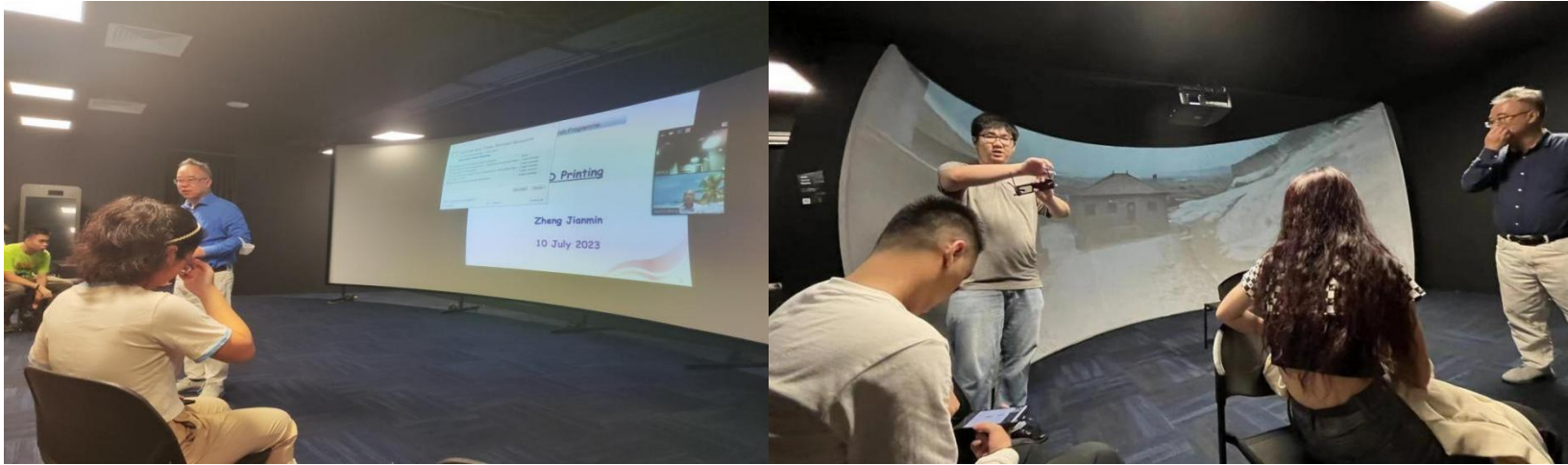
In the 2024 QS Global Subject Rankings, NTU's Data Science and Artificial Intelligence and Computer Science & Information System were ranked 8th and 9th respectively. CAVR offers short training courses in Computer Science and AI, VR & AR, Robotics, 3D Printing, etc.



Winter School Program

To help young students better preparing them for the fast-changing industry, CAVR has designed a series of short training courses in AI, VR & AR, Robotics, 3D Printing, and other fields. From 11 to 18 June 2025, CAVR will host a Short Training Program and International Research Camp in NTU campus on Global Advanced AI and Computer Technology. The aim of program is to help students from all over the world embracing the cutting-edge technology, discussing the latest trend of research, development and innovation, and planning ahead for future learning and career development. Participants will have chances to work on team-based research projects in different areas under the supervision of CAVR academic members. At the end of the project, participants will be issued a Certificate of Completion. The winning teams of the research projects will receive Best Team Awards.

NTU Campus Map Query: <http://maps.ntu.edu.sg/maps>



Core Value of the Training Program

The Program will be conducted by world class experts specifically selected from CAVR faculty in NTU. Participants will attend focused seminars, join group discussions, visit NTU laboratories, and interact with students, researchers, and professors in campus. They will be guided by CAVR faculty to do team projects addressing some of the global challenges today. Some of training course designed: AI, and Advanced AI | Robotics & Applications | VR, AR, & Metaverse | 3D Printing | Digital Twin | Cyber security

Instructors

PROF ZHENG JM <https://dr.ntu.edu.sg/cris/rp/rp00072>
PROF HE Y <https://dr.ntu.edu.sg/cris/rp/rp00503>
PROF CAI Y <https://dr.ntu.edu.sg/cris/rp/rp00317>

Details of 2025 CAVR Program

Day 1: Arrival in Singapore

Day 2: Introduction to AI Concepts, Technology Applications, and Future Trends

- Briefing of The Training Program and Team Project
- Artificial Intelligence History, and State-of-the-art of AI
- AI Technology Applications
- AI Future Trends

Day 3: Virtual and Augmented Reality for Science and Engineering

- Research and applications of Virtual and Augmented Reality
- Virtual & Augmented Reality Technology-enhanced Learning in NTU
- Exploring VR Lab Practical Innovation Projects

Day 4: Effective Presentations and Communications at international Academic Conferences

- Selection of a good international conference
- Submission of international conference papers
- Presentation at international conference

Day 5: Principles, Applications, Development, and Future Trends of 3D Printing Technology

- Introduction to 3D Printing
- Enabling Technology of 3D Printing
- Materials in 3D Printing
- Visit to 3D Printing Lab

Day 6: Understanding Better of NTU

Visit to NTU's HIVE Center

Meet Face to Face with Outstanding NTU Graduate Students

Final Project Presentation

Group Presentations, Professor Reviews & Comments,

Selection of outstanding groups and students, Awards Ceremony for The 2024 CAVR Summer School,

Visit to National University of Singapore (NUS) and Utown Campus

Day 7: Embark on a cultural odyssey—personally explore Singapore's evolution from the Lion City of 700 years ago to its current state of prosperity and stability; immerse yourself in the vibrant interplay and fusion of diverse cultures, enhancing your cross-cultural

Day 8: Departure

Visit To Jewel @ Changi

Note: All courses are held at NTU's CAVR. CAVR reserves the right to adjust the course schedule and faculty.

Program Outcomes

Upon completing this training program, participants will receive:

- 1) A completion certificate endorsed by CAVR in NTU (see sample below),
- 2) Excellent students may be invited to apply for CAVR internships through NTU's formal GEMS system,
- 3) Outstanding students may receive recommendation letter from the CAVR faculty, and
- 4) A best student may be recommended to apply CSC scholarship for exchange or even PhD study in NTU.

Winners of the project teams will additionally receive:

- 5) A Certificate of Best Project Team awarded by CAVR (see sample below).



Program Facilities

Accommodation: Participants will stay in star-rated hotels with air-conditioned double rooms and independent bathrooms

Transportation: The project includes international flight tickets. The pick-up and drop-off service between Singapore Airport and NTU will be provided (Free shuttle bus on NTU campus will be provided).

Insurance: All participants will be provided personal accident insurance

Catering: Daily meals are served in 16 cafeterias in NTU campus, with an average cost of 4-8 Singapore dollars (Self-funded),

Note: All necessary arrangement above during the training program will be on a self-funding basis.

Targeted Participants

Undergraduate / Graduate majoring in Ai, Ai education, computer science, software engineering, network security, information engineering, electronics, automation, etc., with a basic foundation in computer programming-related courses.

2025 年南洋理工大学寒假研习项目

【大学介绍】

南洋理工大学（Nanyang Technological University）是新加坡首屈一指的世界顶级综合类研究型大学，也是世界顶尖大学之一，拥有 33000 名本科生和研究生，分布于工院，商学院，理学院，人文艺术社会科学学院以及研究生院。2024 年 QS 世界大学排名：全球第 26 名，南大是环太平洋大学联盟，新工科教育国际联盟成员，全球高校人工智能学术联盟创始成员，也是国际科技大学联盟的发起成员，连续 7 年蝉联全球年轻大学榜首，其主校区经常被列入全球最美十大校园之一。

南洋理工大学虚拟增强现实研究中心是新加坡南洋理工大学跨学科，交叉研究与应用开发的世界一流学术中心，拥有顶级实验室及先进的技术设备，并与工业界及许多国际研究机构有紧密深入的合作，也是国际前沿创新性人才的重要培养基地。并于 2024 年 11 月 3 日，4 日成功举办了世界 AI 大会。

新加坡南洋理工大学在 2024 年 QS 世界大学排名位于全球第 26 位，计算机学信息学科排名全球第 8 位。

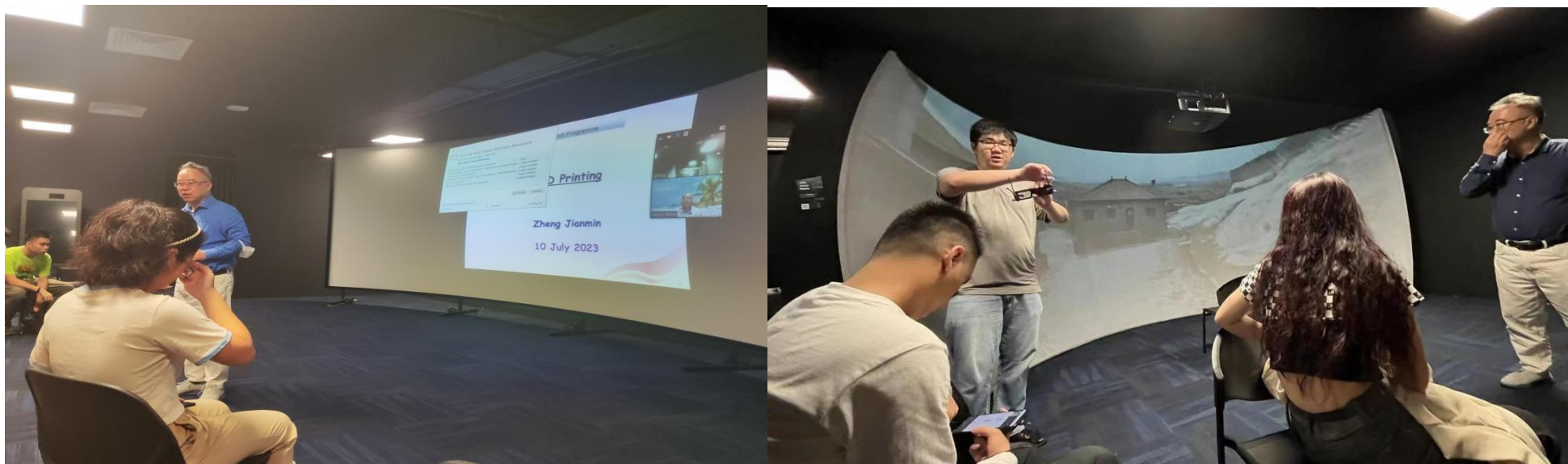


2025

【项目介绍】

随着高科技的不断发展和进步人工智能、虚拟现实与三维打印等新兴科技在 2024 年又掀起新的热潮。特别是在教育领域，人工智能虚拟现实与三维打印技术正在改变传统的教学方式，给计算机网络专业学生们带来更加个性化、多元化的学习体验;同时这些最新的科技发展正在全世界展示其广阔的发展前景。新加坡南洋理工大学虚拟与增强现实中心于 2025 年 01 月 11 日-18 日举办全球高级人工智能与计算机技术国际研营。中心配备顶级虚拟现实设备，授课教授来自于各自领域的国际专家，旨在帮助全球莘莘学子站在科技的前沿，用探索的眼光跟踪当今最新的科技研究与创新发展，为将来的学习和职业生涯规划打下基础。项目结束后，南洋理工大学虚拟增强现实研究中心将为每位学员颁发结业证书，结业比赛中获得优胜的小组成员还将额外获得优秀小组。

NTU 校内地图查询: <http://maps.ntu.edu.sg/maps>





【课程核心价值】

南洋理工大学导师团队亲自指导，师资均来自于南洋理工大学虚拟增强现实研究中心，计算机辅助工程实验室，计算机科学与工程学院，涵盖专业课，小组讨论，重点实验室参观，结业项目教授指导展示等内容，尽力将南大最先进和最好的领域与中国大学生分享，最大程度让中国学生在短时间内体验南大的学术特色。

课程设置：/计算机图形学/人工智能与机器人/虚拟现实/三维打印/CAD/计算机网络安全课程

所有课程全部在 NTU 的 CAVR 进行，CAVR 保留对课程及师资相应调整的权力。

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Visit To Jewel @ Changi

【项目收获】

顺利完成本项目学习的学生将获得：

- 南洋理工虚拟与增强现实中心授予的结业证书
- 成绩优异的学生可以申请工虚拟与增强现实中心的实习
- 表现突出的学生可获教授项目推荐信

表现优异的项目团队将额外获得：

- 南洋理工虚拟与增强现实中心授予获奖证书



Winning project teams will receive:



The Best Team Award

Proudly presented to

for

2024 International AI and VR Summer School

Offered by Centre for Augmented and Virtual Reality (CAVR), Nanyang Technological University, Singapore

15 July 2024
Date

Dr Yiyu Cai, Deputy Director
[Name & Designation]

【项目设施】

- 住宿：包含入住星级酒店（含大陆式早餐）均为空调双人间，独立浴室
- 交通：包含国际机票和往返的新加坡机场与南大之间的接送；乘坐校园内免费穿梭巴士。
- 保险：为学生购买人身保险。
- 餐饮：除结业典礼晚餐，其余日常饮食在南洋理工大学 16 个食堂就餐，人均 4-8 新币（自理）

【申请对象】

AI, AI 教育，计算机、软件工程、网络安全、信息工程、电子、自动化等具备计算机编程相关课程基础的专业的本科学生，研究生。

【项目报名时间】

项目现已开放报名，截止日期：12 月 10 日

【项目费用】

人民币：18900 元/人