2022 Nankai Online "AI Algorithms and Applications" Program

南開大學 Nankai University

Program Highlights

- AI, machine vision, robots in medicine;
- Fundamental knowledge, cutting-edge techniques and systems, a wide range of application case studies;
- A diverse real-world scenarios with two-week study.

What You Will Learn

- Fundamental concepts of computational imaging, image processing, and computer vision;
- Fundamental knowledge of medical robotics;
- How AI enables robots for challenging clinical operations;
- Applications of computer vision algorithms on 2D & 3D scene understanding;
- How the clinical need can be formulated as technical problems, and to develop technical solutions;
- How to design and conduct clinical studies and analyze the results to validate or improve the technical scheme.

— PROGRAM —	— Application Deadline —	— CONTACT —
June27 - July 8,2022 15:00-18:10 PM (Beijing Time) Live Zoom Lectures	June 10	Ms. Liuqing WANG Office of International Affairs, Nankai University *exchange@nankai.edu.cn*

What are the registration requirements?

- Exclusively open to the partners of Nankai University **(Cost Free)**;
- Undergraduates and postgraduates, undergraduates need to have completed at least 2-year undergraduate study when applying;
- Major in computer science, electrical engineering, medical engineering, etc.;
- Sufficient English proficiency and programming skills.

How do I register the program?

Submit the registration form through email, to **exchange@nankai.edu.cn**. Within one week after the application submission, applicants will be informed with admission decisions by the admission team. The admission will follow the principle of “first come first serve” due to the limited space.

How can I obtain the learning certificate?

- **Attend at least 80% of the courses.** Please contact your TA beforehand if you have to be absent to class.
- **Submit a scientific report of the courses.** You are expected to submit a scientific report on what you have learned in the program before July 30.

Nankai University

- Founded in **1919**
- One of the **TOP** universities in China
- **32,000+** students, **2200+** faculty members
- **27** colleges and **190+** academic programs
- **15** disciplines are among the top **1%** of ESI

For more information, please click >> *http://en.nankai.edu.cn*

The Faculties

Course 1: Machine Vision

- **Lecturer: Ming-Ming Cheng**
  Professor, College of Computer Science, Nankai University
- **Educational Background:** Ph.D, Tsinghua University
- **Research Interests:** Computer Vision and Computer Graphics
- **Publications:** published over 100 papers in leading journals and conferences, such as IEEE TPAMI, ACM TOG, IEEE CVPR, etc. Many of his algorithms have become quite popular in the community,receiving more than 20,000 paper citations.
- **Awards:** ACM China Rising Star Award, the IBM Global SUR award, etc.

Course 2: AI and Robots in Medicine

- **Lecturer: Ningbo Yu**
  Professor, College of Artificial Intelligence, Nankai University
- **Educational Background:** Ph.D, ETH Zurich
- **Research Interests:** Medical Robotics and AI in Medicine
- **Publications:** published over 60 papers in leading journals and conferences in engineering, neuroscience, and clinical neurology. Many of his algorithms, techniques and systems have been applied to clinical practice, including diagnosis, surgery and rehabilitation.
- **Awards:** 5 best paper awards in national and international journals/conferences, technology innovation award for ‘intelligent human-in-the-loop rehabilitation’

Program Calendar

2022	Beijing Time (GMT+8)	Central European Time	Schedule
June 27 (Monday)	15:00-15:30	09:00-09:30	Opening Ceremony
	15:30-17:00	09:30-11:00	Machine Vision: Camera & Images
	17:10-18:10	11:10-12:10	Invited Lecture

2022	Beijing Time (GMT+8)	Central European Time	Schedule
June 28 (Tuesday)	15:00-16:30	09:00-10:30	Machine Vision: Image Processing
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Robot Kinematics and Control

2022	Beijing Time (GMT+8)	Central European Time	Schedule
June 29 (Wednesday)	15:00-16:30	09:00-10:30	Machine Vision: Pyramid Matching
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Virtual Reality and Force Feedback

2022	Beijing Time (GMT+8)	Central European Time	Schedule
June 30 (Thursday)	15:00-16:30	09:00-10:30	Machine Vision: Edge Detection
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Surgical Robot Systems

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 1 (Friday)	15:00-16:30	09:00-10:30	Invited Lecture
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Medical Imaging and Processing

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 4 (Monday)	15:00-16:30	09:00-10:30	Machine Vision: Interesting Point Detection
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Image-guided Interventions

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 5 (Tuesday)	15:00-16:30	09:00-10:30	Machine Vision: Fitting & Alignment
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Neural Deficits and Rehabilitation Robot Systems

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 6 (Wednesday)	15:00-16:30	09:00-10:30	Machine Vision: Stereo Matching & Depth Estimation
	16:40-18:10	10:40-12:10	AI and Robots in Medicine: Rehabilitation Therapy and Assessment

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 7 (Thursday)	15:00-16:30	09:00-10:30	Machine Vision: Multi-Scale Image Understanding
	16:40-18:10	10:40-12:10	Invited Lecture

2022	Beijing Time (GMT+8)	Central European Time	Schedule
July 8 (Friday)	15:00-16:30	09:00-09:30	AI and Robots in Medicine : Clinical Applications
	16:40-17:40	09:40-11:40	Invited Lecture
	17:50-18:10	11:50-12:10	Closing Ceremony