AI HIGHER EDUCATION PROGRAMS
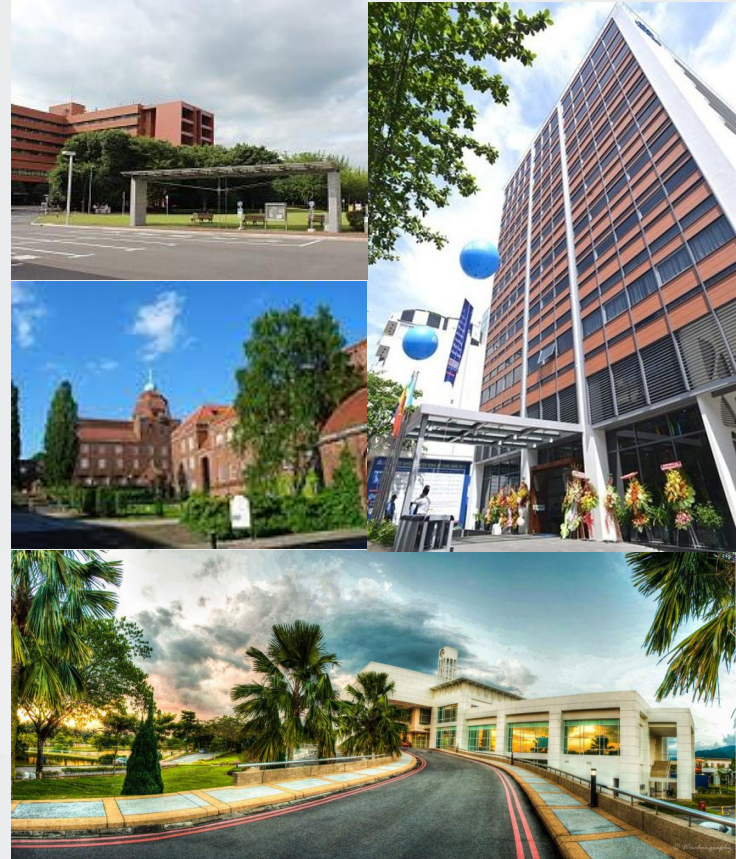
Dr. Vu Tuong Thuy
Hoa Sen University

About me

VP Hoa Sen University
(Academic, Research, International Cooperation)

5-year research industry in Japan
3-year teaching&research in Sweden
6-year Professor of Uni. of Nottingham
Adjunct Professor of James Cook University

UK SYSTEM

BSc in Computer Science with AI

BSc in AI

Most universities go with the 1st option, identical with Computer Science except 3-4 specialized modules in years 2 and 3 and the thesis

UK system

- Not much different in running the 2nd option. As offered by Uni. of Manchester, some specialized themes are introduced (students select 2 of them)

  - Optional: <u>Learning and Search in Artificial Intelligence</u>

    Machine Learning and Optimisation

    AI and Games
  - Optional: <u>Natural Language, Representation and Reasoning</u>

    Symbolic AI

    Natural Language Systems
  - Optional: <u>Visual Computing</u>

    Computer Graphics and Image Processing

    Advanced Computer Graphics

    Computer Vision

By combining the study of artificial intelligence and traditional computing techniques with an understanding from psychology of how humans learn, these degree programmes prepare you for a career applying computing in challenging applications.

ANZ

- Similar to a normal BSc. Computer Science with additional focus (a few modules of AI) such as *Introduction to AI, Advanced topics on AI.*

- Other related-AI modules are also in both programs: *Artificial and Computational Intelligence, Data mining & Machine Learning*

BSc in AI (Deakin as an example)

Bachelor of Artificial Intelligence will equip you with the knowledge and skills necessary to design, develop, and evolve software solutions that takes advantage of the latest advances in artificial intelligence.

- Major: Machine Learning

  Pattern Recognition and Analysis, *Artificial Intelligence*, *Machine Learning*, Human-Computer Interaction, Multivariate Calculus & Ordinary Differential Equations, Advanced Multivariate Calculus & Ordinary Differential Equations, Discrete Mathematics II

- Major Data Science

  Artificial Intelligence, *Machine Learning*, Relational Database Systems, Advanced Database Systems, Data Mining, Advanced Techniques for High Dimensional Data

ANZ

BSc in Computer Science
(Uni. of Queensland)

CARNEGIE MELLON UNI.

BSc in AI

MATH AND STATISTICS CORE
6 Classes

Math Foundations of Computer Science
Differential and Integral Calculus
Integration and Approximation
Matrices and Linear Transformations
Probability Theory for Computer Scientists
Modern Regression

COMPUTER SCIENCE CORE
6 Classes

Freshman Immigration Course
Principles of Imperative Computation
Principles of Functional Programming
Parallel and Sequential Data Structures and Algorithms
Introduction to Computer Systems
Great Theoretical Ideas in Computer Science

ETHICS ELECTIVE
1 Class

Choose from one of the following:
Freshman Seminar: Artificial Intelligence and Humanity
Ethics and Policy Issues in Computing
AI, Society and Humanity

ARTIFICIAL INTELLIGENCE CORE
4 Classes

Concepts in Aritificial Intelligence
Introduction to AI Representation and Problem Solving
Introduction to Machine Learning
Introduction to Natural Language Processing *OR* Introduction to Computer Vision

AI CLUSTER ELECTIVES
4 Classes

Take one course from each of the following areas:
Decision Making and Robotics Cluster
Machine Learning Cluster
Perception and Language Cluster
Human-AI Interaction Cluster
Plus two SCS electives

HUMANITIES AND ARTS
7 Classes

BSAI students take seven courses in the humanities and arts as part of the SCS General Education requirements. Of the seven Humanities and Arts courses in the curriculum, one must be in cognitive science or cognitive psychology.

SCIENCE AND ENGINEERING
4 Classes

BSAI students take four courses in science and engineering as part of the SCS General Education requirements.

OBSERVATION

AI programs require strong **math** background

Play as a specialized **exit of Computer Science** in most (if not all) universities

Either contributes to c**omputational technique**s or **software development**

UK system: 3-year BEng, or 4-year MEng, or **3 + 1 year industry placement**

Other relevant programs like Robotics, Data Science, ….

More to research

IN
VIETNAM

Not a separate program but integrated in many Computer Science, IT programs at public universities

Recently, the following keywords are highlighted in advertising the program

Robotics, AI
Machine Learning
Data Science
Business Analytics
.....

HSU are keen to follow the applied approach, how to make use AI in real world activities

NHU CẦU ĐÀO TẠO NHÂN LỰC XÂY DỰNG VÀ VẬN HÀNH ĐÔ THỊ SÁNG TẠO

19/07/2019, ĐẠI HỌC HOA SEN, 8 NGUYỄN VĂN TRÁNG, Q.1, TPHCM

CALL FOR PAPER & CO-ORGANIZING

1ST KICSS 2006 – AYUTHAYA THAILAND

2007	Ishikawa, Japan
2008	Hanoi, Vietnam
2009	Seoul, Korea
2010	Chiang Mai, Thailand
2011	Beijing, China
2012	Melbourne, Australia
2013	Krakow, Poland
2014	Limassol, Cyprus
2015	Phuket, Thailand
2016	Yogyakarta, Indonesia
2017	Nagoya, Japan
2018	Pattaya, Thailand

KICSS 2019
HO CHI MINH CITY

HOA SEN UNIVERSITY

A member of NHG
Nguyen Hoang Group

DIỄN GIẢ

GS Hồ Tú Bảo
- JAIST
- Data Science Lab, VIASM
- JVN

GS Yung-Cheol Byun
- Jeju University, Korea

- Các nhà nghiên cứu, học giả, NCS chủ yếu đến từ Nhật Bản, Đông Nam Á, Trung Quốc, và các nước châu Âu

- Từ các đại học, viện nghiên cứu, tập đoàn công nghệ của các nước

- Số lượng khoảng 80-100 người.

TOPICS

The conference will cover a broad range of research topics in the fields of knowledge engineering and science, information technology, creativity support systems and complex system modeling. They include, but are not limited to:

Knowledge Science and Creativity Support System:

- Active learning and deep learning
- Creative Behavior Support Systems
- Decision sciences, Decision support systems (DSS)
- Design and Creativity
- Innovation Management
- Knowledge extraction, creation, and acquisition
- Knowledge management and integration
- Knowledge representation and reasoning
- Management of Technology
- Mathematical models of creative processes

- Multi-criteria decision making
- Non-monotonic reasoning
- Ontology creation and management
- Open innovation, Organizational learning
- Recommender systems, Preference modeling
- Scientic information management
- Social Computing, Trust modeling
- Social factors of collaborative creativity
- Software-based stimulation of creativity
- Supervised and semi-supervised learning
- Uncertainty modeling and World models

Information Technology, AI, and Application:

- Geospatial Data Science
- GIS and Remote Sensing applications
- Image processing and classication
- Information fusion and Information quality
- Information retrieval
- IoT application
- Machine learning, deep learning
- Ontology and semantic search
- Pattern recognition
- Security and privacy
- Visual Analytics and Intelligent User Interfaces
- Web intelligence tools

CALL FOR CO-ORGANIZING

Industry session (right after the keynote speech on the 1st day): industry development, market requirement, …

QTSC company tour

Banquet: networking session