FUNDAMENTALS OF LEARNING AND INFORMATION PROCESSING
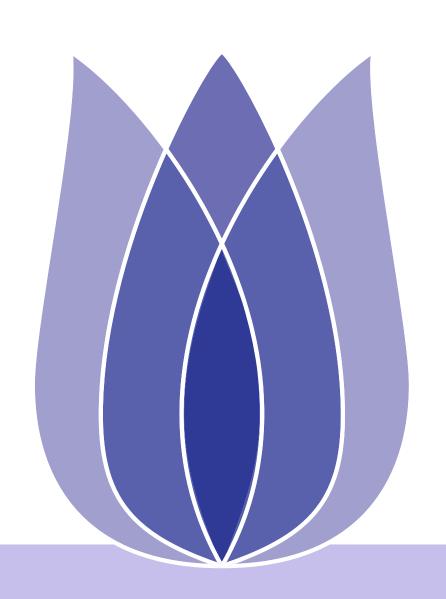# SESSION 20: TULIP APPROACH TO RESEARCH (I)

Gang Li

Deakin University, Australia

2024-03-11

Table of Content

TULIP Academy

Whom am I?
Deakin University
TULIP Lab

NEXUS

NEXUS Training
Outstanding Alumni

Starting NEXUS Training

NEXUS Resources
Recommended Timeline
Pre-NEXUS Skills
Do and Don't

TULIP Academy

Team for Universal Learning and Intelligent Processing

Whom am I?

- Professor **Gang Li**

  ◆ **Deakin University**

    - *University Academic Board Member*
    - *University Thesis Examination Committee*
    - *Cyber Analytics & AI* leader, Deakin CREST
    - *Deputy Director*, Deakin D2I

  ◆ **Academic Services**

    - IEEE Technical Committee

      ◆ Task Force on *Educational Data Mining*, (Chair 2020-)
      ◆ *Data Mining and Big Data Analytics*, (Vice Chair 2017-2019)
      ◆ *Enterprise Information Systems*
      ◆ *Enterprise Architecture and Engineering*

    - IJCAI, AAAI several times as *Area Chair*
    - PAKDD, ACML as *Senior PC*
    - KSEM, etc. several times as *PC/General Chairs*
    - DSS, IT&T, TM, JTR as *Associate Editor*

Deakin University

☞ Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

■ Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)

Deakin University

☞ Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

■ Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)
■ Ranked in the **Top** 50 young universities in the world (*QS and Times Higher Education*)

Team for Universal Learning and Intelligent Processing

Deakin University

👉 Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

- Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)
- Ranked in the **Top** 50 young universities in the world (*QS and Times Higher Education*)
- Ranked in the World **Top** 50 − 75 in *Computer Science and Engineering*, the **4th** in Australia (*Shanghai Rankings* 2023)

Deakin University

👉 Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

- Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)
- Ranked in the **Top** 50 young universities in the world (*QS and Times Higher Education*)
- Ranked in the World **Top** 50 − 75 in *Computer Science and Engineering*, the **4th** in Australia (*Shanghai Rankings* 2023)
- Ranked **#1** in Victoria for student satisfaction for the last 11 years (*Australian Graduate Survey*)

Deakin University

👉 Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

- Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)
- Ranked in the **Top** 50 young universities in the world (*QS and Times Higher Education*)
- Ranked in the World **Top** 50 − 75 in *Computer Science and Engineering*, the **4th** in Australia (*Shanghai Rankings* 2023)
- Ranked **#1** in Victoria for student satisfaction for the last 11 years (*Australian Graduate Survey*)
- **#1** university in Australia for *education experience* (*2019 Student Survey*)

Deakin University

👍 Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Major Rankings.

■ Among the **top** 1 % of universities worldwide (*Shanghai Rankings*)
■ Ranked in the **Top** 50 young universities in the world (*QS and Times Higher Education*)
■ Ranked in the World **Top** 50 − 75 in *Computer Science and Engineering*, the **4th** in Australia (*Shanghai Rankings* 2023)
■ Ranked **#1** in Victoria for student satisfaction for the last 11 years (*Australian Graduate Survey*)
■ **#1** university in Australia for *education experience* (*2019 Student Survey*)
■ **#1** university in Australia for *careers service*(*Australian Graduate Recruitment Industry Awards*)

TULIP *Team for Universal Learning and Intelligent Processing*

👉 Among the **top** 1 % of universities worldwide, *Computer Science* ranked the **4th** in Australia

Table 1: Major Rankings of Deakin University

	Benchmark	2014-2015	2015-2016	2016-2017	2017-2018
ARWU	World	301-400	201-300	201-300	201-300
	National	12-19	9-14	11-14	10-15
CWTS Leiden	World	284	325	314	226
	National	11	17	17	11
QS#	World	360	324	355	293
	National	19	17	19	17
THE	World	301-350	301-350	251-300	301-350
	National	13-15	18-19	12-18	17-21
THE<50	World	45	50	43	50
	National	6	8	8	8

https://www.australianuniversities.com.au/rankings/

TULIP *Team for Universal Learning and Intelligent Processing*

Team for Universal Learning and Intelligent Processing

👉 Focus on Intelligent Techniques

Research Areas.

Artificial Intelligence automate various intelligent tasks using advanced algorithms

Team for Universal Learning and Intelligent Processing

👉 Focus on Intelligent Techniques

Research Areas.

Artificial Intelligence automate various intelligent tasks using advanced algorithms

Privacy & Security Cyber-security and How to preserve the privacy of individuals while analyzing the data

Team for Universal Learning and Intelligent Processing

👉 Focus on Intelligent Techniques

Research Areas.

Artificial Intelligence   automate various intelligent tasks using advanced algorithms
Privacy & Security   Cyber-security and How to preserve the privacy of individuals while analyzing the data
Business Intelligence   support business decision-making using data science and artificial intelligence.

Team for Universal Learning and Intelligent Processing
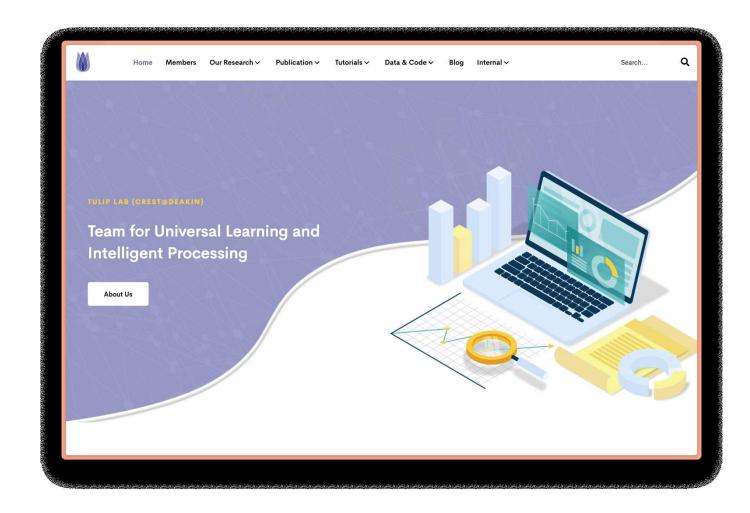
👉 Focus on Intelligent Techniques

Research Areas.

Artificial Intelligence automate various intelligent tasks using advanced algorithms

Privacy & Security Cyber-security and How to preserve the privacy of individuals while analyzing the data

Business Intelligence support business decision-making using data science and artificial intelligence.

AI Applications AI and data science applications in various domains

Web Resources

Official Websites

- **G**: Google Scholar
- ⌂: `https://www.tulip.org.au`
- : `https://github.com/tulip-lab`

Social Media

- : Twitter
- : Reddit
- **in**: Linkedin

TULIP *Team for Universal Learning and Intelligent Processing*

NEXUS Research Training Program

Igniting Innovation, Cultivating Minds: *where Research Excellence Begins*

Igniting Innovation, Cultivating Minds: *where Research Excellence Begins*

Research Internships.

- The Student Researcher Internship offers more opportunities for students to work on **high impact and critical research projects**.

NEXUS Research Training @ TULIP

🪄 **Igniting Innovation, Cultivating Minds**: *where Research Excellence Begins*

Research Internships.

- The Student Researcher Internship offers more opportunities for students to work on **high impact and critical research projects**.
- It allows opportunities **beyond the limitations** of our traditional internship program on aspects such as *duration*, *time commitment*, and *working location*.

NEXUS Training Stages

Stage-3
- ➡ **Collaborative Discovery**: *Intensive Partnership in Research*
- Publications: 2+ *CORE A**
- 🎓 One research proposal for your PhD application

Stage-2
- ➡ **Progressive Research Mastery**: *Frequent Mentorship and Self-Direction*
- publish research papers at *CORE A*/A* conferences
- overtake supervisor in metrics such as 🐱 *contributions*
- develop high-impact *open source data* or *open source code*

Stage-1
- ➡ **Independent Exploration**: *Navigating Research with Guided Insights*
- understand key research topic and method
- complete *literature review*
- develop basic benchmarking *empirical framework*

Excellent intern
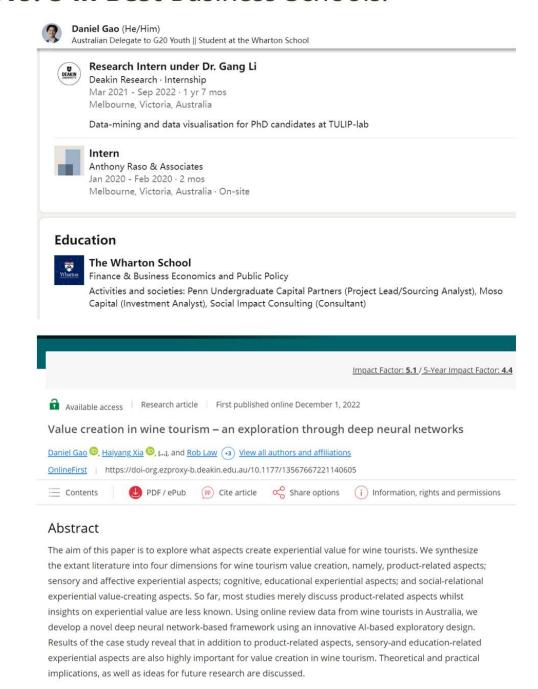
University of Pennsylvania (Wharton) is ranked global

No. 3 in Best Business Schools.

Daniel Gao (He/Him)
Australian Delegate to G20 Youth || Student at the Wharton School

Research Intern under Dr. Gang Li
Deakin Research · Internship
Mar 2021 - Sep 2022 · 1 yr 7 mos
Melbourne, Victoria, Australia

Data-mining and data visualisation for PhD candidates at TULIP-lab

Intern
Anthony Raso & Associates
Jan 2020 - Feb 2020 · 2 mos
Melbourne, Victoria, Australia · On-site

Education

The Wharton School
Finance & Business Economics and Public Policy

Activities and societies: Penn Undergraduate Capital Partners (Project Lead/Sourcing Analyst), Moso Capital (Investment Analyst), Social Impact Consulting (Consultant)

Impact Factor: **5.1** / 5-Year Impact Factor: **4.4**

Available access | Research article | First published online December 1, 2022

Value creation in wine tourism – an exploration through deep neural networks

Daniel Gao, Haiyang Xia, [...], and Rob Law · View all authors and affiliations

OnlineFirst | https://doi-org.ezproxy-b.deakin.edu.au/10.1177/1356766721140605

Contents | PDF / ePub | Cite article | Share options | Information, rights and permissions

Abstract

The aim of this paper is to explore what aspects create experiential value for wine tourists. We synthesize the extant literature into four dimensions for wine tourism value creation, namely, product-related aspects; sensory and affective experiential aspects; cognitive, educational experiential aspects; and social-relational experiential value-creating aspects. So far, most studies merely discuss product-related aspects whilst insights on experiential value are less known. Using online review data from wine tourists in Australia, we develop a novel deep neural network-based framework using an innovative AI-based exploratory design. Results of the case study reveal that in addition to product-related aspects, sensory-and education-related experiential aspects are also highly important for value creation in wine tourism. Theoretical and practical implications, as well as ideas for future research are discussed.

9

Team for Universal Learning and Intelligent Processing

Starting NEXUS Training

Team for Universal Learning and Intelligent Processing

NEXUS Resources

Repositories

- 🐱: TULIP-Lab Resources
- 🐱: TULIP-Lab Open-Projects

Services

- **G**: NEXUS-S1
- **G**: NEXUS-S2
- **G**: NEXUS-S3

Team for Universal Learning and Intelligent Processing

NEXUS-S1 Recommended Timeline

☑ Complete the report and Outstanding work presentation
➜ Participate in the *NEXUS-S1* online meetings

☑ Performance analysis and Research gaps identification
➜ You may develop a *benchmarking* framework for all packages

☑ Benchmarking using open-source codes and datasets

☑ Explore/update literatures and collect data/code

👥 Determine the *projects* fill the *online form*
➜ you will receive the key to your *project specification* file

G Register NEXUS-S1 via *Google Group*
➜ you need to read the *Welcome Message* once joined
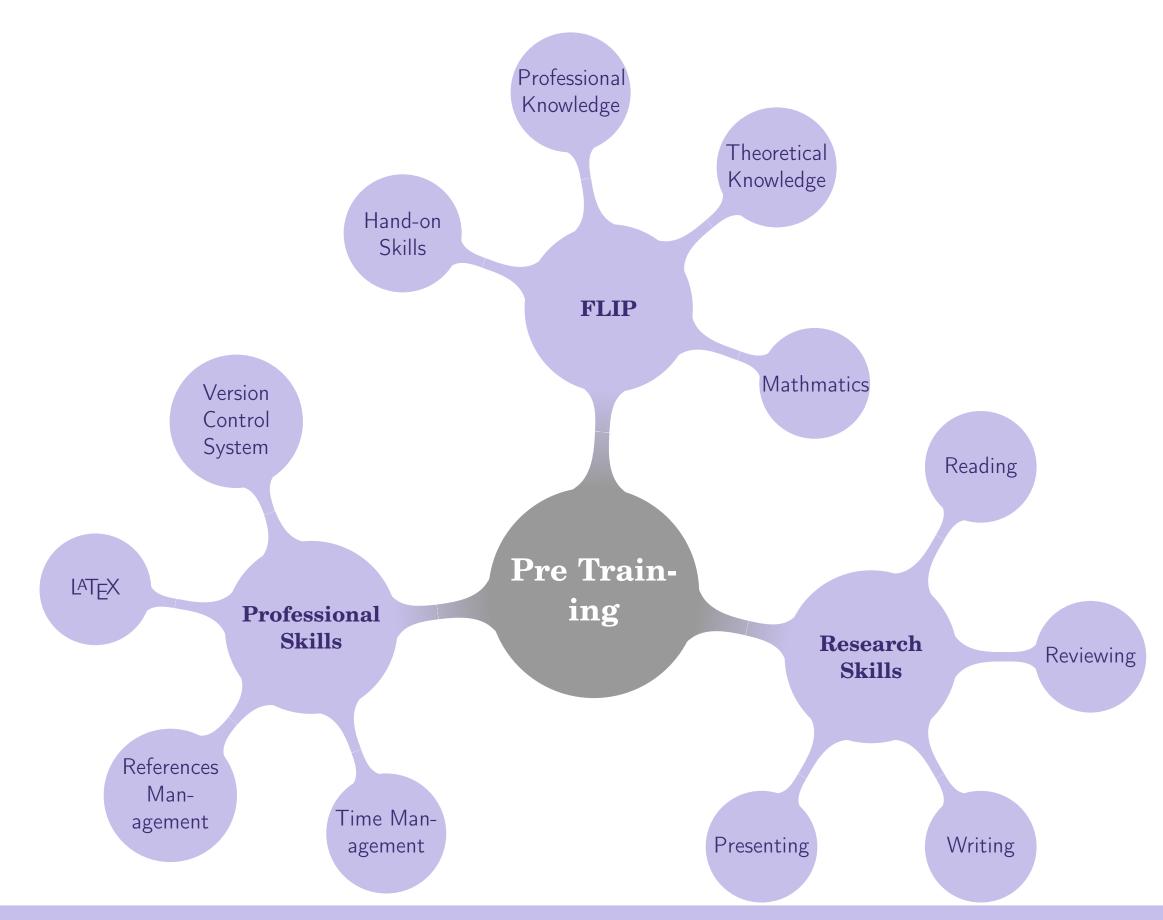
TULIP *Team for Universal Learning and Intelligent Processing*

Pre-NEXUS Skills

Do and Don't

DO

- Be *proactive*
- Read More, Write More
- Find resources and tools proactively
- Reproduce the work from top Papers
- Simulate the writing of Good Papers
- Seek feedback from peers
- Actively participate in the fortnight online NEXUS-S1 meetings
- Actively participate in the NEXUS-S1 Google Group

DO NOT

- Do not be *passive*
- Not in "*Academic writing in English*"
- No ethical issues such as *plagiarism*, *double submission*
- Do not oversell your own work
- Do not wait for instructions, come up with your own ideas

Questions?

TULIP *Team for Universal Learning and Intelligent Processing*
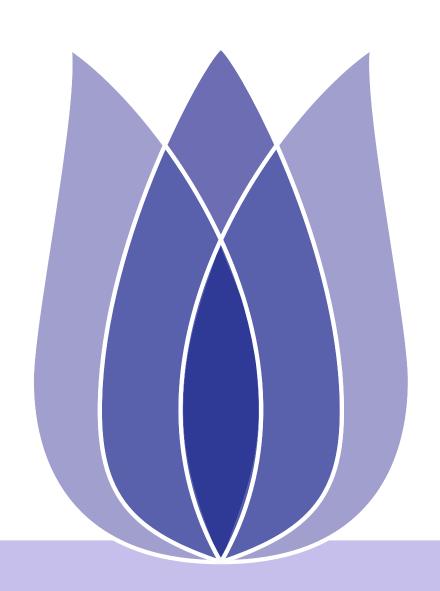
Contact Information

Professor **GANG LI**
School of Information Technology
Deakin University
Burwood, Victoria 3125, Australia

✉ GANGLI@DUCK.COM

⊙ OPEN RESOURCES FROM TULIP-LAB

⌂ TEAM FOR UNIVERSAL LEARNING AND INTELLIGENT PROCESSING, AUSTRALIA