Zhipeng (Zippo) He

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Education

February – December 2021

First Class Honours – Bachelor of Information Technology (Honours)
School of information Systems, Queensland University of Technology, Australia

- Graduated with 6.625 out of 7 GPA
- Awarded *QUT International Merit Scholarship*

February – November 2020

Bachelor Degree[1]**– Bachelor of Information Technology (Information Systems)**
Queensland University of Technology, Australia

- Graduated with 6 out of 7 GPA
- Awarded *QUT International Merit Scholarship*

September 2016 – November 2020

Bachelor Degree[1] **– Bachelor of Engineering (Software Engineering)**
Jinling Institute of Technology, China

- Graduated with 87% Weighted Average Mark

Awards

2021 QUT International Merit Scholarship

- Awarded for the academic excellence in Bachelor of Information Technology (Information Systems) at QUT
- Offered 25% of tuition fees discount for Bachelor of Information Technology (Honours) at QUT

2020 QUT Vacation Research Experience Scheme (VRES) Scholarship

- Awarded for the achievements and recognised suitability for conducting and managing a research project successfully to completion during the study of Bachelor of Information Technology (Information Systems) at QUT
- Offered a VRES scholarship with a stipend of $2,000 to contribute to a research project

2020 QUT International Merit Scholarship

- Awarded for the academic excellence in Bachelor of Engineering (Software Engineering) at JIT
- Offered 25% of tuition fees discount for Bachelor of Information Technology (Information Systems) at QUT

Research Output

Bemali Wickramanayake, **Zhipeng He**, Chun Ouyang, Catarina Moreira, Yue Xu, Renuka Sindhgatta, Building Interpretable Models for Business Process Prediction using Shared and Specialised Attention Mechanisms (2021). arXiv:2109.01419.[2]

[1] JIT–QUT Joint Bachelor of IT Program
[2] Submitted to Knowledge-Based Systems (SJR Q1 journal) on 31/08/2021

Academic Experience

October – December 2021

Research Assistant, School of Information Systems, QUT

- Develop an analytical method for applying explainable AI (XAI) techniques to inspection of predictive models
- Implement the method as an open-source tool package for testing and validation
- Design and conduct experiments for evaluation using publicly available real-life datasets
- Build visualisation of model inspection results
- Develop a website for project publicity

February – December 2021

Honours Research Project – Supervised by Dr. Chun Ouyang and Dr. Catarina Moreira, School of Information Systems, QUT

- Title: Investigating the Impact of Event Logs on Deep Learning-based Process Prediction Performance
- Focusing on investigating and analysing the potential influence of specific characteristics of event logs when predicting next business process activity using deep learning techniques
  - Studying and identifying key characteristics of event logs
  - Analysing the effects of event log characteristics on predicting next process activity based on LSTM and Transformer
- Presenting the research findings and outcome in two scientific papers
  - Paper 1: Submitted to Knowledge-Based Systems for review and the preprint version is available on arXiv (refer to 'Research Output' section)
  - Paper 2: Planned for submission to Journal of Big Data (SJR Q1 Journal)

July 2021

Academic Training – 2021 AMSI Winter School[3] hosted by QUT Centre for Data Science

- Attended lectures and tutorials of advanced statistical learning knowledge such as Bayesian Statistics and Markov chain Monte Carlo related methods
- Gained knowledge of generative deep learning models
- Presented a participant talk[4] titled *Deep Learning-based Business Process Prediction* during the winter school

April – May 2021

Coursework Assignments – CAB430 Data and Information Integration

- Assignment 1: Based on Nexoid COVID-19 dataset[5], creating a data warehouse to analyse the infection risk and mortality risk effectively for people in different regions with different health conditions or different behavior, and at different time periods.
- Assignment 2: Based on a given car rental data warehouse, designing reasonable data mining structures and models to predict some key indicators, for example, predicting the customer's demographic attributes by rented car models.

[3] https://ws.amsi.org.au/
[4] https://slides.zhipenghe.me/old-slides/2021-07-AMSI.pdf
[5] https://www.covid19survivalcalculator.com/

November 2020 – February 2021

VRES Research Project – Supervised by Dr. Chun Ouyang, School of Information Systems, QUT

- Title: Towards Design and Development of Interactive Visualisation for Organisational Analytics
- Aimed to address how to visualise organisational analytics results as informed by existing visual analytics design principles
- Proposed an organisational mining visualisation design workflow for selecting appropriate visualisation techniques to generate organisational mining visualisation
- A project showcase was presented to all the VRES students and supervisors from School of Computer Science and School of Information Systems.[6]

September – October 2020

Coursework Assignment – IAB303 Data Analytics for Business Insight

- Assignment 1: In the scenario that a Brisbane local company would like to create an application that provides low cost travel advise for tourists around Brisbane, I, as a Data Analyst, searched and scratched data of public transport, public parks and spaces, museums, galleries, and free public events in Brisbane from, then analysed and gathered the business insights as advises from the data analytics and data visualisation.
- Assignment 2: In the scenario that the business owners of a small business owner would like recommendations to reduce the risks from the pandamic of COVID-19, I provides some potential recommendations and business advises depending on a detailed TWOS analysis of their last 2 years of sales data and key external factors, e.g., how COVID-19 will affect small businesses in Australia.

August – October 2020

Coursework Case Study – CAB210 People, Context and Technology

- Topic: Based on student feedback, improving the "Get Help" section in QUT HiQ application to ensure students are aware of the support available and can access it when needed.
- I successfully submitted a UX research proposal, which planned a qualitative research to better understand what support students need.
- Following the proposed research proposal, I conducted a case study research by qualitative research techniques, such as interviews, surveys and observations, and presented the research outcomes as a 3000 words report.
- Based on the case study outcomes, I evaluated the usability and user experience (UX) of QUT HiQ application and generated suggestions from improving the design by a short video.

May 2020

Coursework Assignment – CAB202 Microprocessors and Digital Systems

- Assignment: Using standard C library to invent, design, implement, document, and demonstrate the prototype of a microcontroller-based product on Atmega328P-based Arduino Uno board

[6] https://slides.zhipenghe.me/old-slides/2021-02-VRES.pdf

April – May 2020

Coursework Assignments – IAB402 Information Systems Consulting

- Assignment 1: In the scenario that Brisbane City Council requested to charge a toll to scooters on Go Between Bridge to reduce the traffic of scooters, I, as an IT consultant, successfully provided a proposal for solving this problem.
- Assignment 2: In the scenario that Australian Government would like to upgrade and improve the features and UXs of their official mobile application — COVIDSafe, I cooperated with teammates and successfully submitted our proposal and provide a brief presentation of our plan.

March – October 2020

Capstone Project – IFB398/IFB399 Capstone Project
Cooperated with Insurance Department of Suncorp Group

- Project Task: Enable the integration of Management Information Systems for Suncorp's Insurance Portfolio Management Office
- This project involved substantial business analysis work and the configuration of two key enterprise tools: ARIS and Alfabet. Working as a team, we
  - integrated ARIS and Alfabet successfully by utilising existing Application Programming Interfaces (APIs) and other data frameworks;
  - customise the mapping of objects and models based on Suncorp's requirements;
  - create an integration risk management document and a step-by-step integration document for deployment in the production environment

Professional Experience

March – October 2020

Business Analyst – Intern
Suncorp Group, Australia

- Coordinated with a team to integrate the enterprise architectural systems within the insurance department.
- Gathered business requirements and improving data models and reporting frameworks to improve efficiency.

July – October 2019

Java Web Developer – Intern
Yizhi Software Technology Co., Ltd, China

- Project experience with Java web development frameworks – Spring
- Project experience with database modelling and implementation of application backend
- Performs system analysis and system design functions for highly difficult web-based software applications and systems

Academic Skills

Programming Skills:

- Python programming for data mining
- Web application development using Spring in Java and Django in Python
- Shell scripting on UNIX-like systems

Data Science Skills:

- Sound understanding of models in Statistical Learning, Machine Learning and Deep learning, and implementing them in Python and R
- Proficient in creating visualisation for data analytics using Programming Languages (e.g., JavaScript, JSON and Python) and Software (e.g., Tableau)

- Proficient in handling multi-dimensional sequential data (e.g., event logs) for predictive analytics
- Excel in developing RNN-based deep learning models for Natural Language Processing and Business Process Prediction
- Experience with SQL databases (e.g., SQL Server and PostgreSQL) and NoSQL databases (e.g., MongoDB) for data warehousing and data processing
- Experience with Python libraries, e.g., Pandas and Scipy ecosystems, for data preprocessing and data profiling

Technical Artifacts

- **Dynamic and Static Attention-Based LSTM**: *https://github.com/ZhipengHe/DS-Att-LSTM*
- **Echarts Gallery**: *https://github.com/ZhipengHe/echarts*
- **Event Logs Profiling**: *https://github.com/ZhipengHe/Event-Logs-Profiling*
- **Interpretable Attention-based Next Activity Prediction Models**: *https://github.com/ZhipengHe/Shared-and-Specialised-Attention-based-Interpretable-Models*
- **Natural Language Processing Notebooks**: *https://github.com/ZhipengHe/NLP-Notebook*
- **Siamese Networks Implementation**: *https://github.com/ZhipengHe/Siamese-Networks-Practice*
- **Statistical Learning Notes and Implementation**: *https://zhipenghe.me/Statistical-Learning-Notes*

Last update on December 14, 2021