Patrick Zhiji Yu

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SUMMARY

Final-year Master of Computer Science student with a passion for developing impactful technology solutions. Experienced in designing scalable web applications and leveraging data structures and algorithms to solve complex challenges. Currently developing a mobile app under the UOW EIS Summer Scholarship Program, utilizing geotechnical data, predictive algorithms, and a user-friendly interface to assess soil swelling risks in real-time.

EDUCATION

Master of Computer Science — Australia
University of Wollongong — *July 2023 – June 2025(Expected)*
- Current GPA: 6.8/7.0
- Achieved High Distinction (HD) in 10 out of 12 subjects
- Big Data Management (97/100), Web Development (94/100)

Bachelor of Civil Engineering — China
University of Chongqing (QS World Rank 561)
- GPA: 3.57/4.00
- National Inspirational Scholarship, Outstanding Student of Chongqing University Top5%

EXTRACURRICULAR EXPERIENCE

UOW EIS Student Mentor — July 2024 - Present
Guided and supported EIS students in navigating the UOW environment, helping them connect with resources, develop social networks, and enhance their overall academic experience.

UOW Resident Ambassador — 2025
Bangalay Community

Stephen FitzGerald Scholarship Program — Oct 2024
Hosted by Australian National University and National Foundation for Australia-China Relations

Study Australia Industry Experience Program — Nov 2023
Hosted by Australian Trade and Investment Commission

Kitchen hand — Feb 2024 - Aug 2024
Illawarra Steelers Club Wollongong

PROJECT EXPERIENCE

Expansive Soil Swelling Risk Assessment | *Cross-platform Mobile App* — Nov 2024 – Present
- Designed and developed a cross-platform mobile application to evaluate the swelling potential of expansive soils, addressing critical structural risks caused by moisture-induced volume changes
- Built a user-friendly interface using **React Native**, tailored for engineers, contractors, and developers to support informed decision-making and mitigation strategies
- Integrated and deployed lightweight machine learning models (**TensorFlow Lite**) for offline processing and predictive analysis on mobile devices
- Awarded a $6,000 scholarship through the **UOW EIS Summer Scholarship Program** in recognition of contributions to this innovative project

EasyParking Management Portal | *Full-stack web application* — July 2024 – Oct 2024
- Developed a full-stack web application for parking lot operators to manage parking spaces, allowing users to register, log in, check in/out parking spots, and automatically calculate fees
- Implemented administrator features enabling managers to add/remove parking lots and spaces, insert/edit parking locations, search parking spots, and view user data
- Created backend services as **RESTful** APIs using **Python**, **FastAPI** and **Postman**
- Designed a user-friendly interface using **HTML5**, **CSS**, **JavaScript** and **Jquery**

- Utilized **Docker** to containerize **MySQL**, leveraging **SQLAlchemy**'s ORM capabilities for data operations such as create, read, update, and delete

Scheme Interpreter for CS 61A | *Backend mechanics of an interpreter*   Dec 2023 – Jan 2024
- Developed an interpreter for the Scheme language in **Python**, capable of evaluating a subset of Scheme expressions, including numbers, booleans, symbols, lambda functions, and conditionals
- Created a REPL (Read-Eval-Print Loop) for Scheme expressions, providing an interactive user experience akin to other programming language interpreters

Ants Vs. SomeBees Game for CS 61A | *Backend mechanics of a game*   Nov 2023 – Dec 2023
- Implemented core game mechanics, including ant placement, bee movements, and their interactions, using functional and **object-oriented programming** paradigms in **Python**

TECHNICAL KNOWLEDGE AND SKILLS

Data Structures: Linked Lists and Adjacency Lists, Stacks and Queues, KMP, Trie, Disjoint Set, Heap, Hash Table

Algorithms: Quick Sort, Merge Sort, Binary Search, Two Pointers, Discretization, Interval Merging, DFS and BFS, Topological Sort for Directed Graphs, Minimum Spanning Tree

Big Data Tools: Hadoop, HIVE, HBase, Pig, Spark

Developer Tools: Git, Docker, Visual Studio, PyCharm

Libraries and Frameworks: SQLAlchemy, FastAPI

PROFESSIONAL EXPERIENCE

Project Cost Engineer/Manager   Aug 2019 - Feb 2023
Vanke/Overseas Land Ltd. (Real Estate Company)   *China*

- ∗ **Data Analysis and Problem Solving**: Collected and analyzed cost data from multiple projects, correlating findings with project execution and contract agreements to develop and implement cost optimization strategies, resulting in measurable financial efficiency
- ∗ **Leadership and Teamwork**: Led cost control initiatives for two residential apartment projects, providing process management consulting and supervising two teams comprising nine members to ensure effective execution

REFERENCES

Jacqueline Adriaanse   Student Experience & Communications Coordinator‖*UOW*
jadriaan@uow.edu.au

Aaron Pereira   Coursework Tutor‖*UOW*
apereira@uow.edu.au

Jing Li   Coursework Tutor‖*UOW*
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UNIVERSITY OF WOLLONGONG AUSTRALIA

NAME: Mr Zhiji Yu

STUDENT NUMBER: 8359490

COURSE OF STUDY   ********
DATE QUALIFIED   ********
DATE AWARDED   ********

Credit points accrued to date   72

YEAR/ SESSION	SUBJECT NUMBER	SUBJECT NAME	MARK / GRADE	CREDIT POINTS	
		* COURSE - Master of Computer Science			
2023 Spring	CSIT881	Programming and Data Structures	90 High Dist.	6	
	CSIT882	Data Management Systems	95 High Dist.	6	
	CSIT883	System Analysis and Project Management	94 High Dist.	6	
	CSIT985	Strategic Network Design	85 High Dist.	6	24
2024 Autumn	CSIT884	Web Development	94 High Dist.	6	
	CSIT970	Security Essentials	95 High Dist.	6	
	CSIT975	Artificial Intelligence for Cybersecurity	87 High Dist.	6	
	CSIT988	Security, Ethics and Professionalism	88 High Dist.	6	
Spring	CSCI927	Service-Oriented Software Engineering	80 Distinction	6	
	CSIT953	Emerging Topics in Cyber Security	85 High Dist.	6	
	ISIT912	Big Data Management	97 High Dist.	6	
	ISIT929	Concepts and Issues in Healthcare Computing	79 Distinction	6	48

* Currently Enrolled

* Satisfied the University's Independent Learners Introductory Program

END OF TRANSCRIPT

Dated this 17th day of December, 2024
no alterations or erasures

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