

# 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 full-stack web and mobile application development, and recently completed the UOW EIS Summer Scholarship Program, with a proven track record in integrating AI model into mobile app. Currently developing a community-focused mobile application using React Native and FastAPI to connect UOW international students, enabling the exchange of living tips and study experiences.

## EDUCATION

<b>Master of Computer Science</b> <i>University of Wollongong</i> <ul style="list-style-type: none"><li>Current GPA: 6.8/7.0</li><li>Achieved High Distinction (HD) in 10 out of 12 subjects</li><li>Big Data Management (97/100), Web Development (94/100)</li></ul>	Australia <i>July 2023 – July 2025(Expected)</i>
<b>Bachelor of Civil Engineering</b> <i>University of Chongqing (QS World Rank 561)</i> <ul style="list-style-type: none"><li>GPA: 3.57/4.00</li><li>National Inspirational Scholarship, Outstanding Student of Chongqing University Top5%</li></ul>	China

## INVOLVEMENT

<b>UOW Resident Ambassador</b> <i>Organized events and activities to foster an inclusive, engaging, and supportive residential community - Bangalay</i>	2025
<b>UOW EIS Student Mentor</b> <i>Guided and supported EIS students in navigating the UOW environment, helping them connect with resources, develop social networks, and enhance their overall academic experience.</i>	2024
<b>Stephen FitzGerald Scholarship Program</b> <i>Hosted by Australian National University and National Foundation for Australia-China Relations</i>	Oct 2024
<b>Study Australia Industry Experience Program</b> <i>Hosted by Australian Trade and Investment Commission</i>	Nov 2023

## PROJECT EXPERIENCE

<b>Portfolio - <a href="http://patrickyu.work">patrickyu.work</a></b>   <i>Single-page application</i> <ul style="list-style-type: none"><li>Built a modular <b>React</b> application with reusable components, implementing lazy loading and Suspense for optimized code splitting</li><li>Deployed the site using GitHub Pages with a custom domain, managing DNS records and automating build scripts for <b>CI/CD</b></li><li>Configured a professional business email system by integrating <b>Resend</b> (SMTP for domain-authenticated sending), <b>Cloudflare</b> (DNS and email forwarding), and Gmail (custom domain send/receive support)</li></ul>	Mar 2025 – Present
<b>Soil Swell Potential Prediction</b>   <i>Cross-platform Mobile App</i> <ul style="list-style-type: none"><li>Designed and developed a cross-platform mobile application to predict the swelling potential of expansive soils, accelerating initial decision-making by reducing reliance on time-consuming lab tests</li><li>Built an intuitive user interface using <b>React Native</b> and <b>Expo</b>, incorporating AsyncStorage, FileSystem, and Sharing for efficient data storage and management</li><li>Integrated and deployed optimized machine learning models (<b>ONNX</b>) using onnxruntime-react-native, enabling real-time, offline predictions directly on mobile devices</li><li>Awarded a \$6,000 scholarship through the <b>UOW EIS Summer Scholarship Program</b> in recognition of contributions to this innovative project</li></ul>	Nov 2024 – Mar 2025

## BadgerChat | *Web-Based Chat Application(Frontend Project)*

Dec 2024

- Developed BadgerChat, a **React-based** chat application enabling real-time communication in various chatrooms, utilizing **React Router** for dynamic navigation and **React Bootstrap** for a responsive UI
- Implemented user authentication with registration, login, logout, and session persistence using **context API** and **sessionStorage**, ensuring seamless user experiences
- Built message posting, pagination, and deletion features with fetch API, enforcing role-based access control and efficient state management using **React Hooks** (useState, useEffect, useContext)
- Ensured form validation and accessibility by integrating **regular expressions**, **semantic HTML**, and labeled form controls, improving security and user experience

## 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

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**Developer Tools:** Git, Docker, Cursor, Copilot, Sourcetree, Datagrip

**Frameworks and Services:** Expo, FastAPI, React.js, Next.js, SQLAlchemy, Resend, Sanity, Jquery

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

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

**Algorithms:** Quick Sort, Merge Sort, Binary Search, Two Pointers, Discretization, Interval Merging, DFS and BFS

## PROFESSIONAL EXPERIENCE

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### 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

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**Jacqueline Adriaanse**

*jadriaan@uow.edu.au*

Student Experience & Communications Coordinator||*UOW*

**Aaron Pereira**

*apereira@uow.edu.au*

Coursework Tutor||*UOW*

**Jing Li**

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Coursework Tutor||*UOW*



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## TRANSCRIPT OF ACADEMIC RECORD

NAME: Mr Zhiji Yu

STUDENT NUMBER: 8359490

COURSE OF STUDY

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DATE QUALIFIED

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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	
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

\* 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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