

# David Xu

Software Engineer · Fullstack Developer  
Melbourne, Australia

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## Summary

Final year software engineering postgraduate student with experience in web development projects. Open to various opportunities to learn new things, with particular interest in exploring AI-related fields and video game development.

## Education

### The University of Melbourne

Melbourne, Australia

Master of Software Engineering

Feb. 2018 - Jul. 2020

- Weighted Average mark: 77.8
- Won Best Project in Computing and Information Systems Award for Endeavour with web application built for Capital Guardians (2019)

### The University of Melbourne

Melbourne, Australia

Bachelor of Science

Feb. 2015 - Nov. 2017

- Weighted Average mark: 74.7

## Work Experience

### Capital Guardians

Melbourne, Australia

Software Engineer & Fullstack Developer

Mar. 2019 - Present

- Designed and implemented a web application architecture for an NDIS budgeting tool with React and Django
- Managed project and worked in a team of 10 university students as Scrum Master with Atlassian tools
- Instated JWT token-based authentication and handling requests with expired tokens with client-side redirection
- Produced user interfaces and component designs with Figma
- Specified and implemented REST APIs; documented in Swagger to be referenced by team members and future developers

### RESORTer

Melbourne, Australia

Fullstack Developer & Software Engineer

Feb. 2019 - Mar. 2020

- Created a ski lesson booking web application with ReactJS and AdonisJS frameworks
- Deployed site on Heroku, equipped with MySQL database, SSL and root domain redirection
- Discussed business requirements with product manager and refined for best user experience
- Coached interns and performed code reviews to promote best practices

## Other Projects

### AI Pac-Man Agent

Melbourne, Australia

Software Engineer Team Member

Oct. 2019

- Built AI Pac-Man/Ghost Agents capable of traversing through a maze to eat food, chase and evade enemy agents in a capture-the-flag style game (subset of Berkeley Pac-Man projects)
- Utilised heuristics such as weighted A\* and Manhattan distance alongside reinforcement learning in Python

### Multi-processor N-body Simulation

Melbourne, Australia

Software Engineer Team Member

Oct. 2019

- Co-designed a basic simulation model to track movements of approximately 10000 particles under each other's gravitational force
- Created model with MPI in C and ensure program produces correct results on a multi-core processor across different platforms
- Visualised model with Python and Matplotlib, ensuring performance for up to 10000 particles

### Distributed Message Relaying System

Melbourne, Australia

Software Engineer Team Member

Oct. 2018

- Constructed a multi-server-client system capable of directing, relaying and directing client-to-client messages between servers hosted on different network locations
- Handled multiple, concurrent message passing with message queues made with Java and object oriented design
- Enforce system integrity in the event of client and server disconnections

## Extracurricular Activity

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### The University of Melbourne MSE Case Competition

Melbourne, Australia

Core Member & Presenter

Mar. 2018 - Apr. 2018

- Won 3rd place in an team-based competition for proposing solutions for engineering problems
- Brainstormed oil rig decommission ideas in a team, resulting a proposal to re-purpose it as a docking station for unmanned underwater vehicles for maintenance of other oil rigs
- Presented the proposal to a live audience and panel of judges

### SuperHack

Melbourne, Australia

Mentor

Dec. 2018

- Taught programming fundamentals to female high school students to empower women in STEM fields
- Participated Arduino and ZumoBots workshop to strengthen knowledge in programming with sensors
- Supervised and helped students with programming a ZumoBot to traverse a maze

## Skills

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<b>Programming</b>	Java, Python, C, Object-oriented Programming, JavaScript (ES6), UNIX, SQL
<b>Project Management</b>	Git (GitHub, GitLab, Jira), Agile Scrum, Atlassian Tools
<b>Web Development</b>	React, Redux, Django, HTML, REST API, AdonisJs
<b>Languages</b>	English (native), Japanese (JLPT N4), Chinese (basic)
<b>Other</b>	Computer building, Karate