Sydney, NSW, Australia
matthew.li055@gmail.com

Matthew Li

Portfolio: corrade.github.io

Software engineer with a strong interest in games, networked systems and high performance code. Computer science graduate, amateur illustrator. Australian citizen currently living in Sydney but open to relocation!

`C++` `C#` `Distributed Systems` `Linux` `Git` `Jira`

EXPERIENCE

Software Engineer Intern @ VMware
Feb. 2022 - Jul. 2022 (6 months)

- Wrote RESTful APIs in the backend of tools for VM creation and packaging. `C#` `.NET`
- Designed and built frontend components for [Imager](), a tool for creating golden image VMs. Imager entered the top half of VMware's most downloaded experimental tools within months of release. `Angular` `TypeScript` `CSS`
- Collaborated using the agile methodology in a small team working hybrid. `Jira` `Bamboo` `Git`

Tutor for Game Development @ University of New South Wales
Sep. 2022 - Nov. 2022 (3 months)

- Assisted with ideation, graded deliverables, provided detailed feedback and handled grievances. `Unreal`
- Independently organised and ran a live Q&A with an industry professional.

EDUCATION

University of New South Wales
2019 - 2022 (4 years)

Bachelors (Honours) in Computer Science | First-class honours

- 2019, 2020, 2021 Faculty of Engineering Dean's Honours List

PROJECTS

Netcode: P2P Deterministic Lockstep

- Implemented a multiplayer fighting game using the deterministic lockstep networking model. Adopted a peer-to-peer architecture, utilised both TCP and UDP, handled serialisation and simulated latency and packet loss. Repository and detailed README [here](). `C#` `Unity`
- Researched and wrote detailed notes on netcode protocols [here]().

Bachelor's Thesis: Interfaces in First-Person Shooter Games

- Compared four industry-standard types of interfaces for activating voice commands in first-person shooter games. Developed a 3D first-person shooter, deployed a HTTPS server for telemetry, conducted online playtesting and performed a statistical analysis. `C#` `Unity` `Blender` `AWS (EC2)` `Python`

Game Jams

- Participated in numerous game jams. Designed, illustrated and programmed games according to given themes while under time pressure. Placed top 8% in [GMTK Game Jam 2020]() out of 5400+ participants. Placed fifth in graphics for [Ludum Dare 45 COMPO]() out of 700+ competitors. `Unity` `Godot`

Miscellaneous

- **Competitive programming**: Applied topics such as data structures, dynamic programming and graphs to design, optimise and debug algorithms `C++`
- **Operating systems**: Implemented the file syscalls and virtual memory subsystem of the educational kernel OS/161 `C`
- **Security**: Wrote a stripped-down version of SSL involving RSA, DH and AES `C++` `OpenSSL`
- **Computer graphics**: Created scenes by implementing techniques such as splines, deferred rendering and SSAO `C++` `OpenGL`