

CELES CHAI JIA XUAN

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EDUCATION

National University of Singapore

Singapore

Bachelor of Computing in Computer Science

Jul 2023 – May 2027

- GPA: 4.55/5.00 | Member of NUS College (Honours)
- Relevant Coursework: Data Structures and Algorithms, Operating Systems, Parallel Programming, Object-Oriented Programming, Software Development Lifecycle, Media Computing and Signal Processing, Linear Algebra, Calculus, Artificial Intelligence and Machine Learning, Operating Systems

PROJECTS

VisibleBits: Illuminating Mixed Reality with Li-Fi Information Spotlights

May 2025 – Nov 2025

- Demonstrated prototype at [The 31st Annual International Conference on Mobile Computing and Networking 2025](#) to industry professionals and renowned researchers
- Represented NUS as the only undergraduate author at MobiCom 2025
- Developed new visible light communication (VLC) system completed with Li-Fi transmitter, receiver, driver, and transmission protocol
- Received great feedback from [Dr. Victor Bahl](#) and all chairs of MobiCom on research methodology and potential
- Customised augmented reality application that circumvents lack of API support for Meta Quest 3 by leveraging the serial port
- Implemented custom high power LED driver involving SMT soldering and PCB design

AWARDS & ACHIEVEMENTS

- **SigMobile Travel Grant** – Awarded S\$1,000 to support travel expenses for attending the MobiCom 2025 Conference in Hong Kong.
- **ASEAN Undergraduate Merit Scholarship** – Covers full subsidised undergraduate tuition fees plus S\$5,800 annual living allowance, S\$3,000 annual accommodation allowance, and a one-time S\$1,750 computer grant.
- **REx Research Grant** – Awarded up to S\$2,500 to support research expenses by NUS Office of the Deputy President and Provost.
- **ASEAN Scholarship for Pre-University** – Covers annual allowance with hostel accommodation, settling-in allowance, return travel for Malaysians, school and GCE A-Level exam fees, plus subsidised medical and accident insurance.

WORK EXPERIENCE

Student Researcher – System Design, Augmented Reality, Embedded Systems, Networking, VLC

Jan 2025 – Nov 2025

WEISER Lab, National University of Singapore (Supervisor: [Dr. Ambuj Varshney](#))

Singapore

- Developed the VisibleBits system mentioned in the Projects section
- Prototyped hardware for device drivers and hardware component interfacing
- Troubleshooted hardware issues using logic analyzers and waveform generators for signal analysis

Founding Engineer

Jun 2025 – Present

SakuraSpeak

Singapore

- Developed a language learning platform that provides personalized language learning experiences through conversations, serving 900 subscribers and generating more than USD10k monthly revenue
- Introduced a dynamic search algorithm for language learners to search in multiple languages, receive both dictionary and cultural content, to learn Japanese organically
- Designed familiarity scoring and recommendation algorithm, improving user engagement and retention through a spaced repetition system (SRS)

- Implemented backend pipelines for LLM integration, enabling automated user-level assessment, contextual understanding, and intelligent estimation of unavailable data
- Established technical standards, documentation, and processes to streamline future team onboarding and ensure operational consistency
- Led product development and technical architecture decisions, implementing scalable systems using DynamoDB, Express.js, and AWS Lambda

Introduction to AI and Machine Learning Teaching Assistant

Aug 2025 – Nov 2025

NUS CS2109S

Singapore

- Delivered weekly tutorials on AI/ML concepts, guiding students through coding exercises, algorithms, and applied problem-solving.
- Graded assignments, analyzed common errors, and provided targeted feedback to improve student understanding of technical concepts.
- Incorporated survey feedback and performance metrics to iterate on instructional material for improved clarity and engagement.
- Developed and maintained AI/ML problem sets, collaborating with lead instructors to improve content clarity, and align assignments with course learning outcomes.

Cyber Transformation Intern

May 2024 – Aug 2024

KPMG

Singapore

- Conducted extraction and delivery of logs for Singapore's Government on Commercial Cloud migration project
- Demonstrated strong problem-solving skills by proposing and implementing PowerShell, Task Scheduler and VBA scripts to automate server maintenance, data extraction, and file management tasks
- Optimized processes through automation initiatives, completing log migration project originally requiring team of 4 alone within same timeframe
- Documented technical procedures and created comprehensive user guides for client support team handover

Vice President, Junior College Executive Committee

Apr 2021 – May 2022

Singapore Ministry of Education

Singapore

- Led team of 11 members, collaborating with MOE officers and managing project deliverables during pandemic
- Adapted escape room event to virtual format using Gather Town, expanded capacity and publicity reached 2000+ Instagram accounts
- Spearheaded VLog bank initiative preserving project impact, accumulating over 1900 views
- Facilitated sprint planning for virtual events

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C++, JavaScript, TypeScript, Go
- **Web & Mobile Development:** React.js, Next.js, Express.js, RESTful APIs, Expo (iOS/Android), HTML, (Tailwind) CSS
- **Database & Cloud:** SQL, MongoDB, PostgreSQL, DynamoDB, AWS (EC2, Lambda), Azure Speech Service, Docker
- **Hardware & Embedded:** Microcontrollers, Firmware Development, PCB Design, Logic Analyzers, Waveform Generators, Circuit Diagnostics
- **Other:** LaTeX, Matplotlib, Spring Security, Docker Compose, WinSCP, Task Scheduler, Git/GitHub, Integration Testing, PowerShell, VBA, Spring

LANGUAGES

English (Native/Bilingual), Chinese (Native/Bilingual), Malay (Fluent)