

MA ZHIYU

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EDUCATION

Anglo-Chinese School (Independent) (2023-2024)

International Baccalaureate (IB), 44/45

Extracurricular Activities:

- Robotics Technology Society (Chair of Techsquad Division)
- Science Research Challenge (Research Committee)
- IB Guitar Orchestra (Bass Performing Section)
- Young Entrepreneurs' Society
- Nanyang Research Programme
- AWS Data Science Accelerator Programme (Capstone Project Leader)
- Young Founder's Summit (Entrepreneur in Residence)

School-related Awards:

- Founder's Day Award 2025: Academic Excellence in IB Examinations
- Honours' Day Awards 2024: Certificate of Distinction for Science Research Challenge & Guitar Orchestra
- Daisy Phay Foundation Award Scholarship 2023-2024
- DSTA Junior College Scholarship 2023

Methodist Girls' School (2019-2022)

Integrated Programme (IP), 44/45

Extracurricular Activities:

- Infocomm Coding & Sound Club (Hackathon Team Captain)
- Young Defence Scientists' Programme (YDSP)
- Swift Accelerator Programme (Graphic Design Lead ExCo)
- Girl Guides (Patrol Leader, Welfare Head)
- Moot Parliament Programme

School-related Awards:

- MGS Commendation Awards: Infocomm Coding & Sound Club Certificate of Distinction in Achievement & Service, Girl Guides Certificate of Merit
- National Youth Achievement Council (NYAA) Awards: Bronze (2021)
- MGS Academic Book Prize in Higher Chinese 2022

WORK EXPERIENCE

Fabrica AI: Robotics Startup for Automatic Tile-grouting

Jan - Apr 2025

Robots v5.0

Software Intern

- Developed embedded software for an automatic tile-grouting robot, and operated/debugged the robot during trial runs, including a 48-hour dry run
- Configured a fleet of Jetson electronics using NVIDIA SDK Manager for deployment on actual robots within construction sites in Singapore

Young Founders' Summit

Jan - Jul 2024

Entrepreneur in Residence

- Co-founder & CTO of MediSync, startup formed under incubator program designed to support young entrepreneurs in building impactful startups
- Improved startup reach following 5-day bootcamp in Singapore to a 6-month mentorship journey with startup founders, 500Global mentors etc.

Defence Science Organisation (DSO)

Nov - Dec 2023

AI & UI/UX Intern

Draft Publication Title: Web Development using Generative AI

- Developed an interactive rating tool on the DSO Large-Language Models (LLMs) Chatbot
- Applied chatbot response retraining through skipgram Word2Vec algorithms
- Managed backend operations using Postman for API testing and debugging

Nanyang Research Programme, NTU

Mar - Nov 2023

Apprenticeship

Research Paper Title: A Particle Swarm Optimisation (PSO) Algorithm Approach to the Travelling Salesman Problem (TSP) and its Application in Routing Optimisation for E-Waste Collection

- Co-authored paper under the mentorship of an Associate Math & CS Professor at National Institute of Education (NIE)
- Received Gold Award for research paper

Defence Science & Technology Agency (DSTA) -

Sep - Dec 2022

Research@YDSP Machine Learning Intern

Research Paper title: Evaluation of Drone Detection Technologies

- Qualified as a Finalist in the Singapore Science & Engineering Fair (SSEF) 2023 Finals, Presented project at the Young Defence Scientists' Programme (YDSP) Congress 2023
- Evaluated, improved and trained drone detection models using Convolutional Neural Networks (CNNs) for DJI Mavic & Phantom drones
- Curated & expanded dataset of ~1.4k images using synthetic and real-world data

Digital Fabrication Space, Science Centre Singapore -

Sep - Oct 2022

Embedded Systems & Microcontrollers Intern

- Engineered an Arduino-based water tank simulation to model tsunami formation
- Developed and produced educational video tutorials and powerpoint decks on Arduino microcontrollers, covering topics such as ESP-32 camera integration and ATtiny85 microcontroller applications
- Operated and maintained 3D printing systems, including the Ultimaker 3 and the Creality CR-6 SE 3D

PROJECTS

Co-Founder of GiftDuck: iOS application published on the App Store

- Birthday reminder scheduling app receiving 50k+ app views, 2k+ downloads as part of the Swift Accelerator Programme 2022
- Also served as the Graphic Design Head of the programme, designing social media posts, banners and merch for the Swift Innovators' Summit with 200+ attendees in-person

AWARDS & ACHIEVEMENTS

Entrepreneurship & Innovation

Singapore Girls in Tech 2023

One of 31 honourees in conjunction with SG Women in Tech

BRAINHACK Code_Exp Most Human-Centric Design Award Champion 2023

App Development Competition with 200+ participating teams tasked to develop an App for Public Good

SPLASH Innovation Awards 2023

Top 20 teams in the High School Category

IMPACT Festival Makeathon 2022

Honourable Mention in the Junior Category, Selected to present project to now President of Singapore at the LionsForge IMPACT Festival 2022

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Asia Pacific Innovation Challenge 2021

1st Runners' Up among 44 international teams across 12 countries

Microsoft Imagine Cup Junior 2021

Top 10 teams in Singapore

Science & Mathematics

Singapore Science & Engineering Fair Silver Award 2024

Top 17% of finalist projects; National STEM Talent Search Semi-finalist in Computer Science

Nanyang Research Programme 2023

Gold Award

Australian Mathematics Competition

High Distinction Award 2024, Distinction Award 2020, 2022

Design Thinking with Robotics and Computation Thinking International Competition 2023

Silver Award, 6th in Singapore

TI-GC Designing with Graphing Calculators Competition

Silver Medal 2020, Bronze Medal 2021

Founder of FoodSaverSG: iOS application aiming to tackle food wastage in Singapore

- Received \$2k seed funding as hackathon champion, used profits to support pilot initiative with NGO *Food from the Heart* in developing a food donation drive map of 80+ locations across Singapore (currently in progress)
- Co-founded Project Aembrosia 2.0 as an extension of FoodSaverSG, managing 40+ volunteers weekly in food donation drives with *Food from the Heart*
- Managed social media @projectaembrosia as Digital Marketing & Tech Lead

Co-Founder & President: Graphing Calculator Tutoring Project @ MGS

- Mentored 40+ students in the use of TI-GC Calculators for a GDC Design Competition as a previous 2x winner through weekly workshops
- Spearheaded creation of 40-page Graphing Calculator manual for easy reference
- Assisted trouble-shooting of calculator functions outside school hours

Organiser: Visualise 2030! Data-storytelling Competition 2021

- Co-hosted comp. for 88 youths across 12 schools to improve youth activism in sustainability efforts for the SG Green Plan 2030
- Taught Scratch programming & design masterclasses across weekly online workshops with Infocomm Club batchmates

Co-founder & Software Engineer of MediSync: Biotech startup seeking to enable seamless medication administration through microneedling

- Led iOS app and watch development for medication scheduling and administration
- Created startup pitches at Young Founder's Summit & SPLASH Innovation Awards for funding opportunities