



Welcome to my portfolio!

Hello, I am Ryan Tung Tze-Jin.

description about me here



More description about me



Leadership

Class Vice-Chairperson 2021

Serving as the Class Vice-Chairperson in 2021 was a privilege and responsibility that allowed me to contribute to the cohesion and well-being of my classmates. This role involved assisting the class chairperson in various tasks, representing the class in meetings, and fostering a positive and inclusive class environment. Through my tenure as Class Vice-Chairperson, I developed leadership skills, communication abilities, and a sense of camaraderie with my peers.

SYFC Vice-Chairperson 2023

Serving as the CCA Vice-Chairperson in 2023 was a rewarding leadership experience that allowed me to contribute to the growth and development of my co-curricular activity. This role involved coordinating activities, supporting members, and representing the CCA to the school community. Through my tenure as CCA Vice-Chairperson, I developed leadership skills, teamwork abilities, and a sense of responsibility towards my peers and the organisation.





Achievements

Academics

CCC - CDC Education Merit Award 2022

Receiving the CCC - CDC Education Merit Award in 2022 was a significant recognition of my academic achievements and contributions to the School of Science and Technology, Singapore. This award highlighted my dedication to academic excellence, leadership, and community service. It motivated me to continue striving for success in my studies and extracurricular activities. The CCC - CDC Education Merit Award acknowledged my hard work and encouraged me to maintain a high standard of excellence and make a positive impact in my school and community.



**CCC – CDC
EDUCATION MERIT AWARD
2022**

is presented to

RYAN TUNG TZE-JIN

of

SECONDARY 2

SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE

MR EDWIN TONG
DEPUTY CHAIRMAN
PEOPLE'S ASSOCIATION

MS DENISE PHUA
MAYOR
CENTRAL SINGAPORE DISTRICT

Scanned with CamScanner

SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE Mail - 2023 EDUSAVE SCHOLARSHIPS FOR INDEPENDENT SCHOOLS (YEARLY AWARD)

SSST
SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE

RYAN TUNG TZE JIN student <ryan_tung_tze_jin@s2021.ssts.edu.sg>

2023 EDUSAVE SCHOLARSHIPS FOR INDEPENDENT SCHOOLS (YEARLY AWARD)

1 message

MOE LS (MOE) <MOE_LS@moe.gov.sg>
To: "ryan_tung_tze_jin@s2021.ssts.edu.sg" <ryan_tung_tze_jin@s2021.ssts.edu.sg>

1 April 2024 at 14:44

1 April 2024

SCHOOL OF SCIENCE AND TECHNOLOGY, SINGAPORE

Dear RYAN TUNG TZE-JIN

2023 EDUSAVE SCHOLARSHIPS FOR INDEPENDENT SCHOOLS (YEARLY AWARD)

LETTER OF AWARD

Congratulations! We are pleased to inform you that based on your school examination results in academic year 2023, you have been awarded the 2023 Edusave Scholarships for Independent Schools (Yearly Award).

2. The award quantum will be the lower of the following:

- (a) \$2,400; or
- (b) the annual school fees charged by the Independent School in 2023, less the annual amount of school fees and standard miscellaneous fees paid by students in government/government-aided schools.

3. The ESIS (Yearly Award) quantum will also deduct the portion of the fee subsidy covered under Independent School Bursary or any other awards / scholarships/programmes, if applicable.

4. The award quantum will be downloaded to the school to make the necessary adjustment for your fees, where applicable.

5. We wish you every success in the future.

Edusave Scholarships for Independent Schools 2023

Receiving the Edusave Scholarships for Independent Schools in 2023 was a significant honour and recognition of my academic achievements and contributions to the school community. The scholarship provided financial assistance and served as a testament to my hard work, determination, and commitment to academic excellence.

Through this award, I felt empowered to pursue my educational goals and positively impact society.

Yours sincerely,



Achievements

STEAM-related

Youth Cyber Exploration Programme 2021

Participating in the Youth Cyber Exploration Programme in 2021 was an eye-opening experience that introduced me to cybersecurity and digital forensics. This program provided hands-on training in cybersecurity concepts, ethical hacking techniques, and digital investigations. Through the Youth Cyber Exploration Programme, I developed critical thinking skills, problem-solving abilities, and an awareness of cybersecurity issues in the digital age. The prizes of a year-long subscription to TryHackMe also helped me further develop my skills.

Youth Cyber Exploration Programme

Central Capture-The-Flag Competition

Certificate of Participation



Is hereby presented to:

Tung Ryan Tze-jin

For completing the

2021 YCEP CCTF

24 JUNE 2021


MR SELWYN SEAN SCHARNHORST
DIRECTOR, ECOSYSTEM DEVELOPMENT DIVISION,
CYBER SECURITY AGENCY OF SINGAPORE



ORGANISER



EVENT PARTNER

Youth Cyber Exploration Programme

Central Capture-The-Flag Competition

Certificate of Excellence

Is hereby presented to:



Ivy Tay
Samuel Poon
Ryan Tung
James Chen
Justin Lim

For achieving

**First Place Winner in
the Team Category**

24 JUNE 2021


MR SELWYN SEAN SCHARNHORST
DIRECTOR, ECOSYSTEM DEVELOPMENT DIVISION,
CYBER SECURITY AGENCY OF SINGAPORE



ORGANISER



EVENT PARTNER



RSM Foundation International Math Contest
Competing in the International Math Contest in 2021 allowed me to test my mathematical skills and problem-solving abilities on a global stage. This competition challenged me to solve complex mathematical problems under time constraints and in a competitive environment.



Achievements

STEAM-related

Cyber Silver Explorer

Earning the Cyber Silver Explorer Certificates in 2021 was a testament to my commitment to cybersecurity education and digital literacy. These certificates recognised my proficiency in cybersecurity fundamentals, online safety practices, and ethical behaviour in cyberspace. I gained awareness of cybersecurity threats and strategies to protect myself and others online through Cyber Silver Explorer.





Achievements

STEAM-related

SIC

At SIC, I honed my flight simulation skills in preparation for a pilot career. Every Saturday at SYFC HQ in Seletar Airport, I trained with the Trainers using their simulation software and attended morning briefings, refining my flight circuits and aviation knowledge.



Flight Experience Programme 2023

Participating in the Flight Experience Programme at SYFC HQ in 2023 was a thrilling opportunity to get real-life experience with aviation and flying. This programme allowed me to sit in an RSAF C-130 flown by experienced pilots. I explored the plane during the flight, looking at the view through the cockpit. Through the Flight Experience Programme, I gained a deeper understanding of aviation, piloting, and the sheer volume of military plane engines while fueling my passion for flying.



Achievements

STEAM-related

Singapore Amazing Flying Machine Competition

SAFMC/SIAC

Representing Singapore Schools at the SYFC Inter-school Aeromodelling Competition (SIAC) and Singapore Amazing Flyimg Machine Competition during both 2022/2023 in the Launch Glider category was an exhilarating experience. This local event required us to design, build, and launch gliders, focusing on achieving optimal flight performance. The competition tested our engineering skills, creativity, and ability to work under pressure. Through this experience, I gained a deeper understanding of aerodynamics and the principles of flight while learning the importance of precision



Representing Singapore Schools at the SYFC Inter-school Aeromodelling Competition (SIAC) 2022/2023 in the Flight Simulation category was an exciting opportunity to immerse myself in aviation. This local event required us to fly a virtual Cessna around Seletar Airport in a rectangular circuit pattern, testing our piloting skills and strategic thinking. The competition provided a realistic simulation environment, enhancing my understanding of flight dynamics and decision-making under pressure. This experience gave me greater confidence in my abilities and a more profound passion for aviation.



Achievements

STEAM-related

AI for Industry | Literacy in AI

Participating in the AI for Industry Literacy in AI program in 2023 gave me a comprehensive understanding of artificial intelligence and its applications across various industries. This program equipped me with the knowledge and skills to navigate the evolving landscape of AI technology and its potential impact on the workforce and society.



Ryan Tung Tze-Jin

has successfully completed the Apple certification requirements of

App Development with Swift
Associate

April 22, 2023
Date Issued



App Development with Swift | Associate

Completing the App Development with Swift Associate certification in 2023 was a significant milestone in my journey as a developer. This certification validated my proficiency in Swift programming language and app development fundamentals. It opened doors to opportunities in mobile app development and equipped me with the skills to create innovative and user-friendly applications.



Achievements

STEAM-related

Swift Accelerator Programme (SAP) 2023

Participating in the Swift Accelerator Programme (SAP) in 2023 accelerated my learning and proficiency in Swift programming. This intensive program provided me with hands-on experience, mentorship, and exposure to industry best practices in iOS app development. Through the Swift Accelerator Programme, I honed my coding skills and prepared myself for a career in mobile app development.



Scan the QR code to check it out!

PlaneMail (Currently on the App Store)

Being involved in the PlaneMail project in 2023 during SAP was an exciting opportunity to innovate in communication, explore the Swift programming language and deploy an app on the app store. This project challenged me to develop solutions for efficient email planning through an application. Through PlaneMail, I gained practical experience in project management, teamwork, and problem-solving while also exploring the potential of Swift technology in creating smooth software applications.



Achievements

STEAM-related

SST INC

At SST INC, we learned SWIFT and React for app development and had opportunities to build and compete. I met amazing teammates there, and together, we created a web app that won second runner-up for SST INC Best App of the Year, earning us a trip to San Francisco. We later reunited for various competitions, later winning an honourable mention at Changemakers InnoFest and publishing an email planning ap on the App Store.



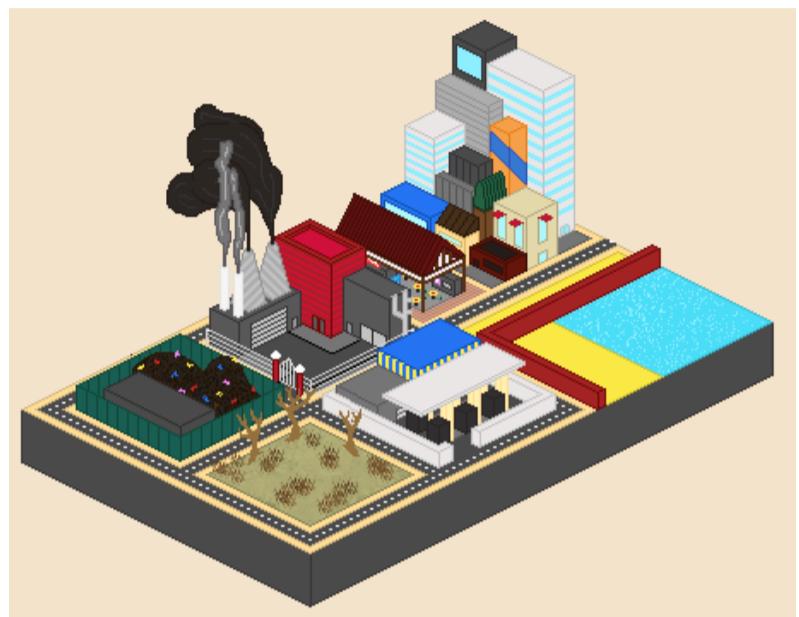


Achievements

STEAM-related

Sus-city, currently still deployed at
<https://sus-city.github.io/SIGNUP-PAGE/signup.html>

Participating in Sus-city in 2023 broadened my understanding of sustainable urban development and gamification. This experience inspired me to contribute to making education systems less stressful. Through Sus-city, I gained insights into sustainable practices and learned how technology can address urban challenges.



Scan the QR code to check it out!

SST INC Best app of the Year Second Runner Up

Achieving the SST INC Best App of the Year second runner-up position in 2023 was a testament to my passion for app development and innovation. This competition challenged us to develop a unique and functional app that addresses real-world problems. My team and I worked tirelessly to conceptualise, design, build our Sus-city, focusing on user experience and practical applications. This process enhanced my coding skills, creativity, and problem-solving abilities. This achievement was not just a recognition of our technical skills but also of our ability to work collaboratively and think critically about the needs of our users. The experience motivated me to continue exploring app development and strive for excellence in future projects.



Achievements

STEAM-related

San Francisco Learning Journey

My team, having been selected for an overseas learning journey after creating Sus-city, I learnt many new things about the unique start-up and tech company culture in San Francisco, as well as the history of various people and computers, the culture of universities such as Stanford and scientific institutions such as the California Academy of Sciences.

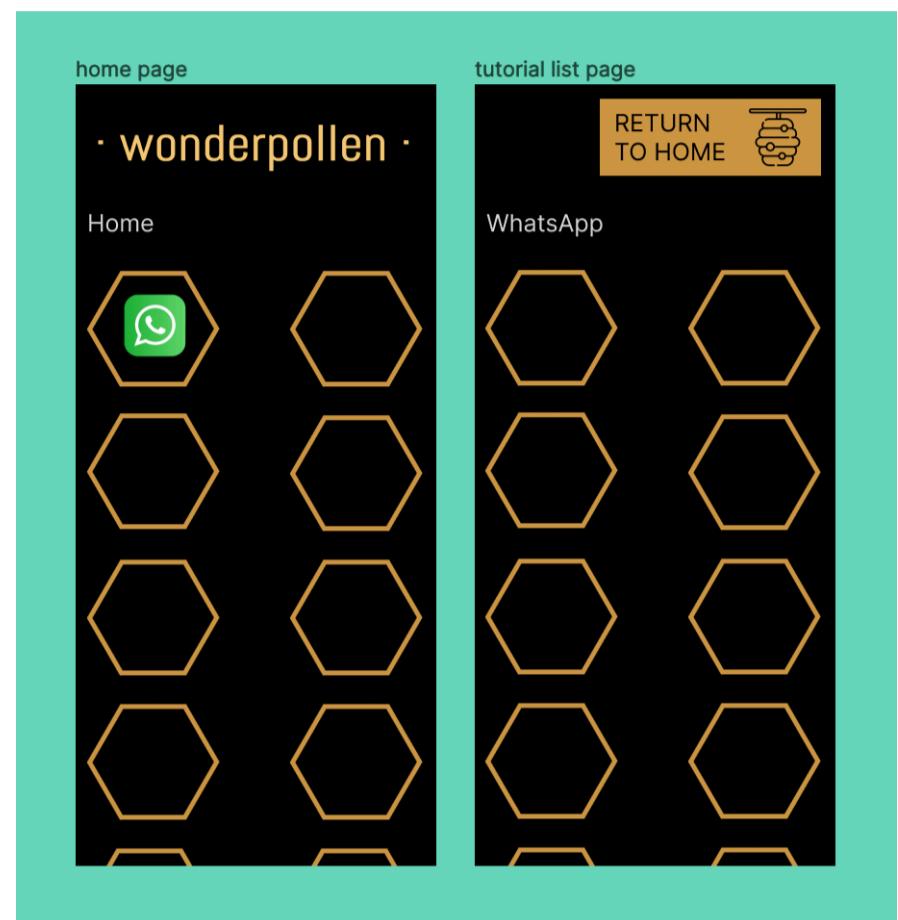


Achievements

STEAM-related

Changemakers InnoFest 2022

For Innofest, my group developed and presented the minimum viable product of a tutorial app for the elderly to ensure that whenever they download an app, they receive an alert that shows them the option of a video tutorial on how to use the app, effectively bridging the gap between the elderly and technology. We received honourable mention.



CERTIFICATE

of participation

Proudly presented to

Ryan Tung Tze-Jin

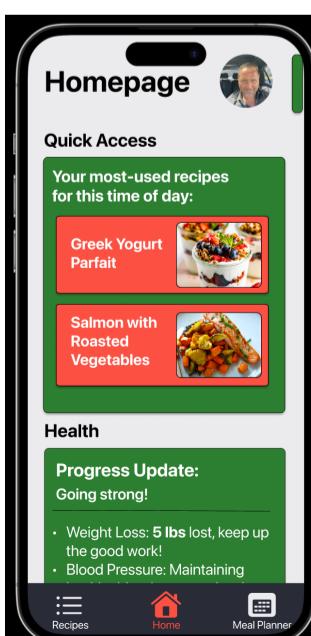
of

Team TechCare Trio

for your participation in Splash Awards 2023

Adrian Chye
Chairman, SCS Student Chapter
Singapore Computer Society

Aow Jia Rong
Chairman, SCS Splash Awards 2023
Singapore Computer Society



Splash Awards 2023

Participating in Splash Awards with a proposed solution to an identified nutrition problem in healthy ageing, the smart nutrition planner app, NourishWise+, which aimed to provide personalised meal planning, nutritional guidance, and social support for older adults, provided me with an opportunity to re-visit my design and research skills.



Achievements

STEAM-related

International Perse Coding Team Challenge

Representing my school and achieving the Gold Award at the International Perse Coding Team Challenge (Round 1) in 2024 was an incredible experience. It was a testament to our team's hard work, collaboration, and technical skills in coding. Winning this award not only validated our abilities but also motivated us to strive for excellence in the field of computer science and programming. Advancing to the Perse Round 2 Final and achieving a Merit in 2024 was significant, showcasing my continued dedication and proficiency in coding and problem-solving. Participating in the final round further sharpened my skills and provided valuable learning experiences.



Ryan Tung Tze-Jin Tan Jun Yu Rian

ROUND 1 PAIRS CHALLENGE

2023-24



Ryan Tung Tze-Jin

ROUND 2 FINAL

2023-24



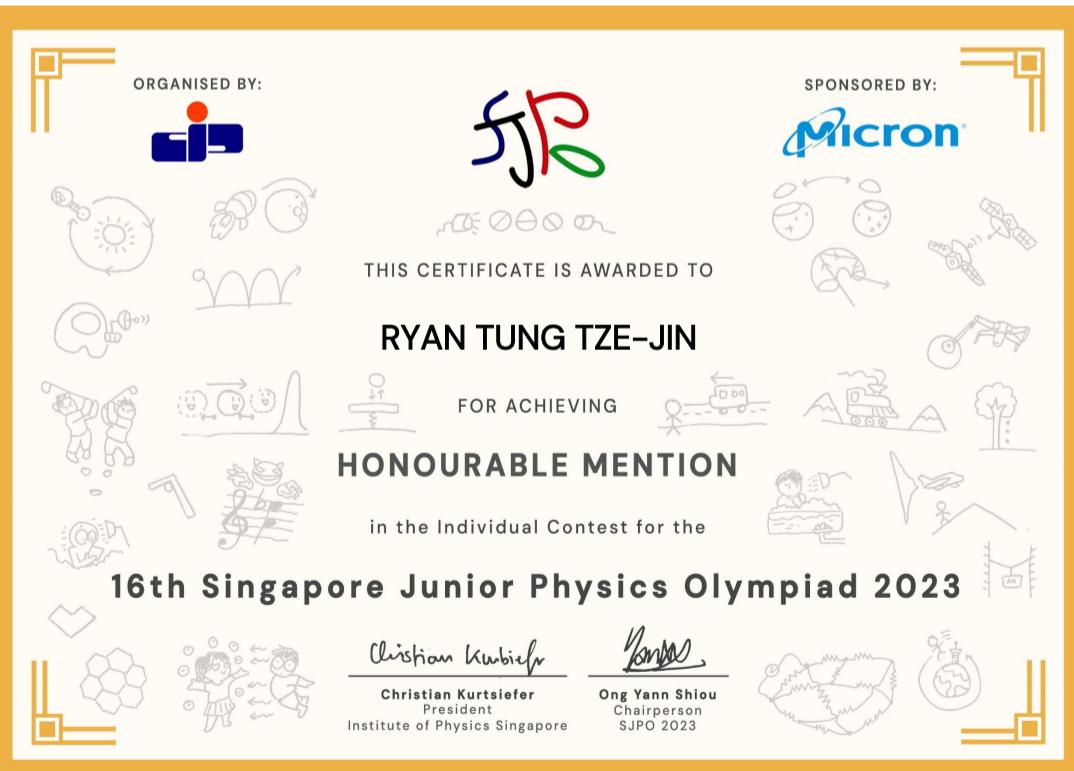


Achievements

STEAM-related

Singapore Junoior Physics Olympiad

Representing my school at the Singapore Junior Physics Olympiad as part of a team in 2023 was an enriching experience that deepened my understanding of physics concepts and principles. This competition challenged us to apply theoretical knowledge to solve practical problems. I developed critical thinking skills, teamwork abilities, and a passion for scientific inquiry through the Singapore Junior Physics Olympiad.



Participating in the Singapore Junior Physics Olympiad as an individual competitor in 2023 allowed me to test my knowledge and skills against peers in the field of physics. This competition pushed me to excel in understanding physics concepts, problem-solving abilities, and experimental techniques. Through the Singapore Junior Physics Olympiad, I gained confidence in my scientific abilities and a deeper appreciation for the wonders of the physical world.

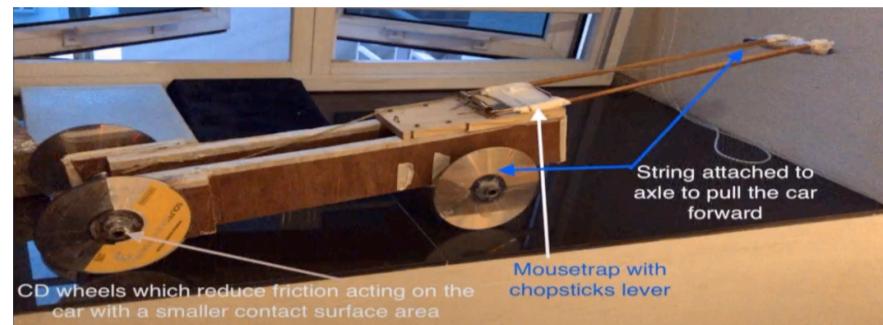


Achievements

STEAM-related

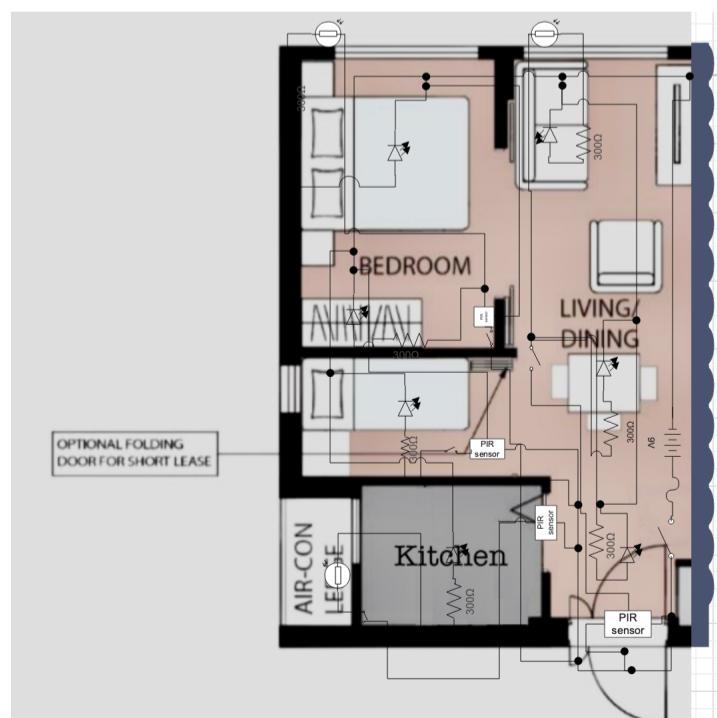
Physics Performance Tasks

Participating in the Mouse Trap Performance Task in 2021 was an exciting and educational experience that combined creativity, engineering, and strategic thinking. Our task was to design the best mouse trap, competing against other groups using various engineering skills such as building, testing and modification.



The Investigative Skills in Science in 2022 was a profoundly engaging project where we decided to investigate the effect of the design of the diffuser opening area on the downforce of a model F1 car. This task aimed to contribute to producing an efficient F1 design, particularly relevant since the FIA (Fédération Internationale de l'Automobile) had introduced new rules that rethought aerodynamics and allowed the use of ground effect.

For the 2023 S3 Phy IDP PT1 - Home Circuit, Our task was to design and build a smart home circuit for an HDB home, focusing on reducing electrical energy consumption using the concepts of Electricity. We had to create and use an empathy map to design a circuit individually. My team and I then employed engineering design techniques such as the decision matrix to decide on a design and create a working prototype of the smart home circuit on a floor plan on a circuit board.





Achievements

STEAM-related

Physics Performance Tasks

Participating in the S4 Science Communication Performance Task was a dynamic and enriching experience. Over six weeks, I collaborated with my group to analyse a research paper, develop a Pop Science Article, and deliver an oral presentation. This task honed my research and communication skills while fostering a deeper appreciation for science communication's impact and importance.



Producing More with Less: The Innovation in Kale's Nutritional Profile

Introduction: Kale's Green Revolution

In the heart of the land-scarce city-state of Singapore, where skyscrapers intertwine with the pursuit of a sustainable future, a transformative initiative takes root. The "30 by 30" vision sets an audacious goal—to nurture 30% of the nation's nutritional needs locally by 2030. This sparks an agricultural revolution, and at its core is the magic of deficit irrigation—an innovative method that provides water below the full needs of the plant and that produces periods of water stress, poised to realise Singapore's bold food security ambitions and harvest a bounty of nutrient-rich, safe, and locally diverse delights.



What if we told you this is the way to make vegetables even more nutrient-packed? Enter the kale laboratory, where *Brassica oleracea var. palmifolia*, also known as Tuscan kale, takes centre stage in a cutting-edge experiment. Let's peel back the layers and explore the secrets behind this kale transformation.

Participating in the 2024 S4 IDP Phy-Math Integrated Performance Task (iPT) was an intellectually stimulating experience that involved designing and building an antenna capable of receiving a radio wave broadcast of a Morse code message. Our project spanned several weeks and required us to apply principles from both physics and mathematics to create a functional and efficient antenna.



Achievements

STEAM-related

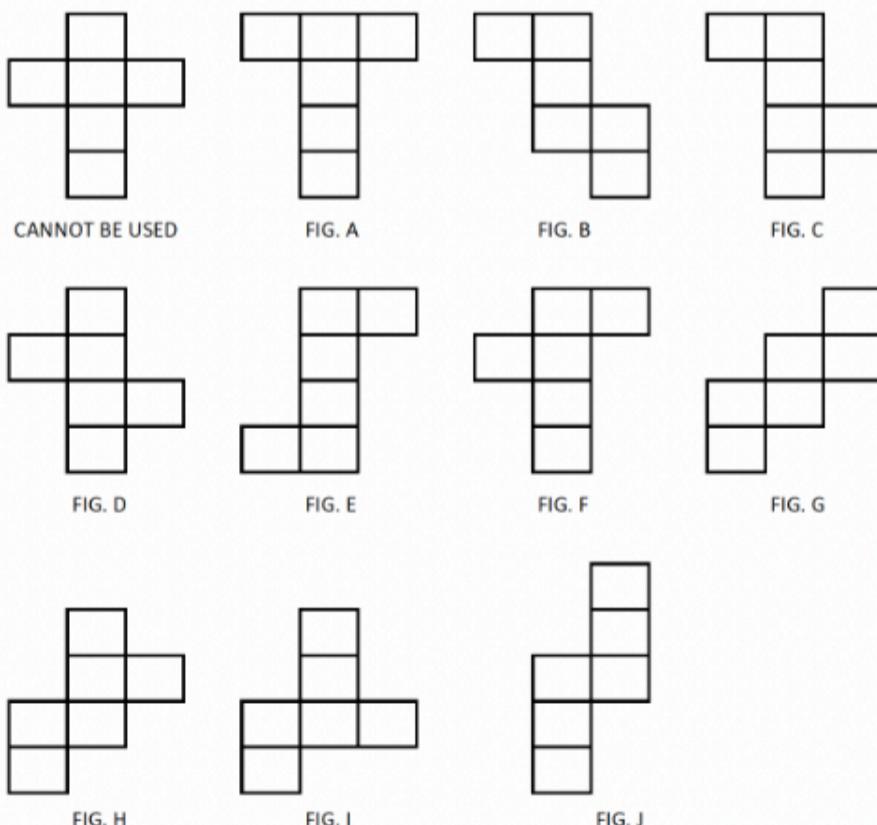
Math Performance Tasks

Participating in the 2021 Secondary 1 Mathematics Performance Task was an insightful journey in collecting information about the dietary habits of SST students. Over six weeks, my group researched recommended daily energy requirements and designed a survey to assess students' knowledge and food choices. Analysing the data, we crafted a 5-day menu meeting nutritional needs, culminating in a Group Report, Presentation Video, and Individual Reflection. This task deepened our understanding of nutrition and sharpened our mathematical and scientific skills.

Day	Meal for that day
Day 1 - Monday	Meal Suggested for Today: Noodles with a Chicken Nugget, egg and

Kang Kong (available in the Chinese Noodle Stall)	
Nutrients	Amount
Total Calories	470
Total Fat	31.2 g
Saturated Fat	7.3 g
Cholesterol	416 mg
Protein	20.6 g

Day 2 - Tuesday
Meal Suggested for Today:



Participating in the 2022 Secondary 2 Mathematics Performance Task challenged us to optimise milk box dimensions for efficiency.

Through mathematical modelling, we systematically explored cuboid net shapes to minimise material usage while containing 1.5 litres of milk. Our script and video presentation outlined our process, from identifying variables to explaining our calculations and assumptions. This task enhanced our mathematical skills and teamwork, offering a rewarding problem-solving experience.



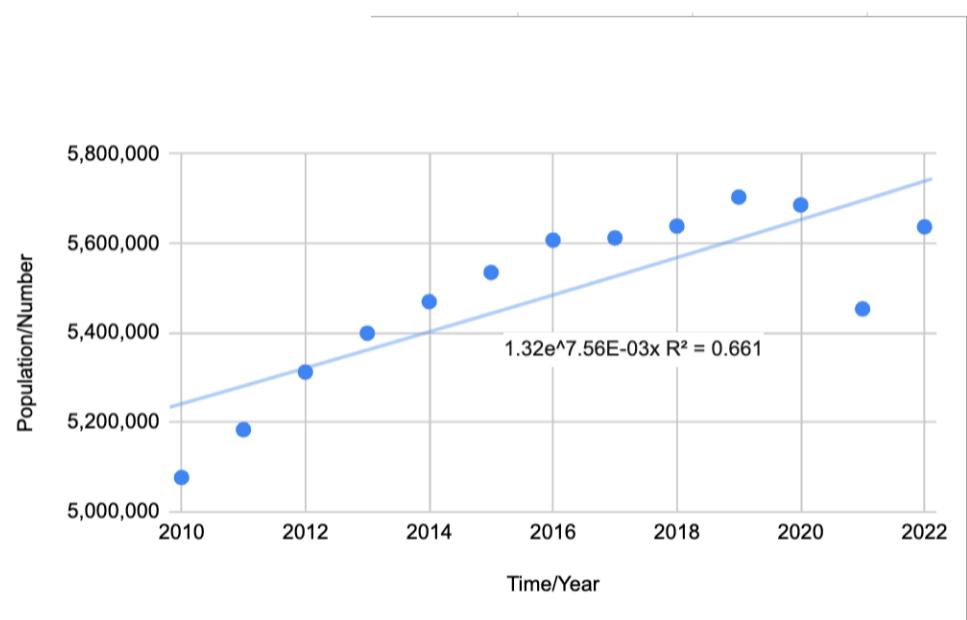
Achievements

STEAM-related

Math Performance Tasks

Participating in the 2023 Secondary 3 E Math Performance Task was an engaging journey into mathematical modelling and population analysis. Over several weeks, my group worked diligently to analyse population trends in Singapore, aiming to predict whether the population would reach 6.9 million by 2030 and estimate when it would reach 10 million.

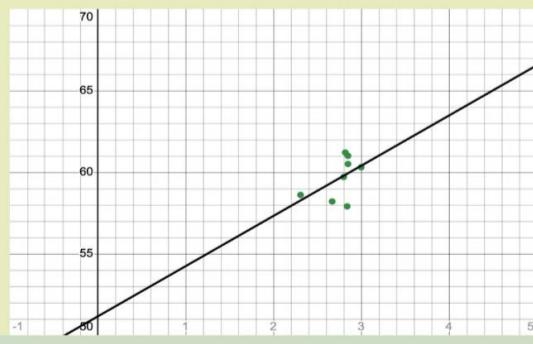
Through pre-task activities and group discussions, we formulated mathematical models based on key factors and assumptions, utilising data from reliable sources to support our predictions. This task enhanced our mathematical skills and underscored the importance of applying mathematical methodologies to real-world problems.



Mean EL Overall Rating (X) vs Mean EL Grade (Y)

There is a moderate positive correlation (0.4402) between the average of EL classroom experience rating and the average of EL Grade. This suggests that the average grade also tends to increase as the overall classroom experience rating increases.

R-value = 0.4402



The S4 Mathematics Performance Task 2024 focused on statistics, correlation, and regression to explain the relationship between classroom experience ratings and class grades. We started by explaining domains and formulating potential questions about each data set. Next, we analysed classroom experience data to find correlations with academic performance, using statistical diagrams to support our findings. This task required clear explanations and thorough methodology, enhancing our data handling and analysis skills.



Achievements

STEAM-related

Computing+ Performance Tasks

Through the 2023 Sec 3 Computing+ IDP Coursework, I better understood the Machine Learning process, particularly in applying supervised learning techniques to solve complex problems. I practised problem-solving and computational thinking skills, allowing me to make an email spam detection model that could make accurate predictions.

Results of Predictions using Test Set and Final Conclusion

Include screenshot(s) of the predictions made and your evaluation on the test set.

SVM kernel = "rbf"

```
===== RESTART: /Users/ryantungze-jinstu/Downloads/evaluation_SVM_model.py =====
Accuracy: 0.9319852941176471
Precision: 0.949814126394052
```

Decision trees kernel = "gini"

```
Accuracy: 0.9237132352941176
Precision: 0.9373848987108656
```

This shows that SVM kernel = "rbf" is still better than decision trees kernel = "gini". The results show that SVM kernel = "rbf" has on average 1% better than decision trees gini. This demonstrates that the model we chose in the Conclusion in Stage 4 still performs better.

This model is suitable because it appears to be effective in detecting non-spam emails from spam emails. The fact that the SVM model consistently outperforms the Decision Trees model also suggests that it's more robust and reliable, which is crucial for making accurate predictions on real-world email data.

We feel that this model will be able to make reliable predictions when applied to new unseen data outside our dataset. For example, we had edited our code to make us able to input our own data to test our model out. Our model was able to accurately tell us that our spam email we created was in fact spam. We have also tested our model with our teacher's email. Our code was able to accurately tell us that our teacher's email was not in fact spam. Thus, we feel that our model will be able to make reliable predictions when applied to new, unseen data outside our dataset.



Participating in the 2024 Sec 4 IDP Cohort Coursework was an enriching experience that allowed me to apply my coding skills and creativity to design a virtual photo booth for SST's 15th Anniversary. This project deepened my understanding of face recognition technology and honed my ability to innovate in response to real-world challenges. Collaborating with my team, we developed virtual props that reflect SST's journey and created an engaging, user-friendly interface. Our coursework was

nominated to be showcased during a Mentors' Networking Session. Pitching our ideas to the mentors provided valuable insights into user-centric design and inspired us to explore additional features, such as recognising different faces to apply specific props. This experience was instrumental in enhancing my technical skills and creative problem-solving abilities.

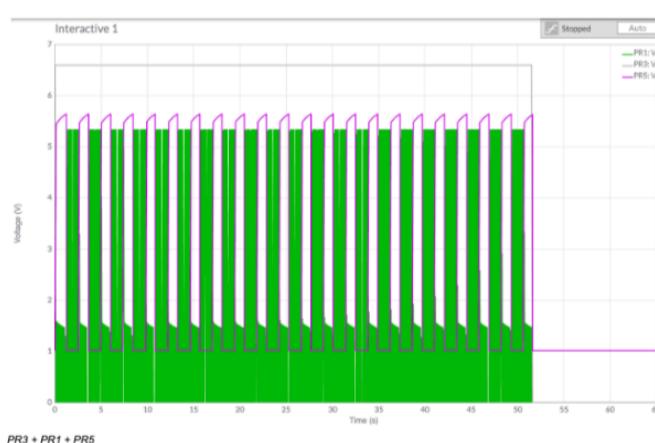
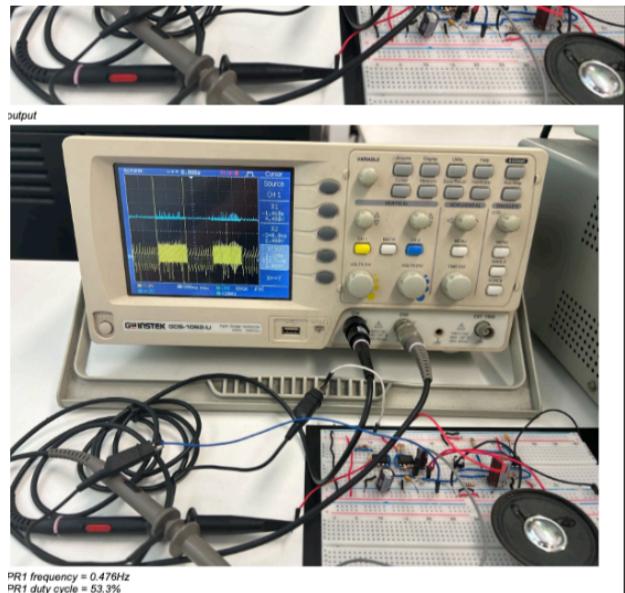
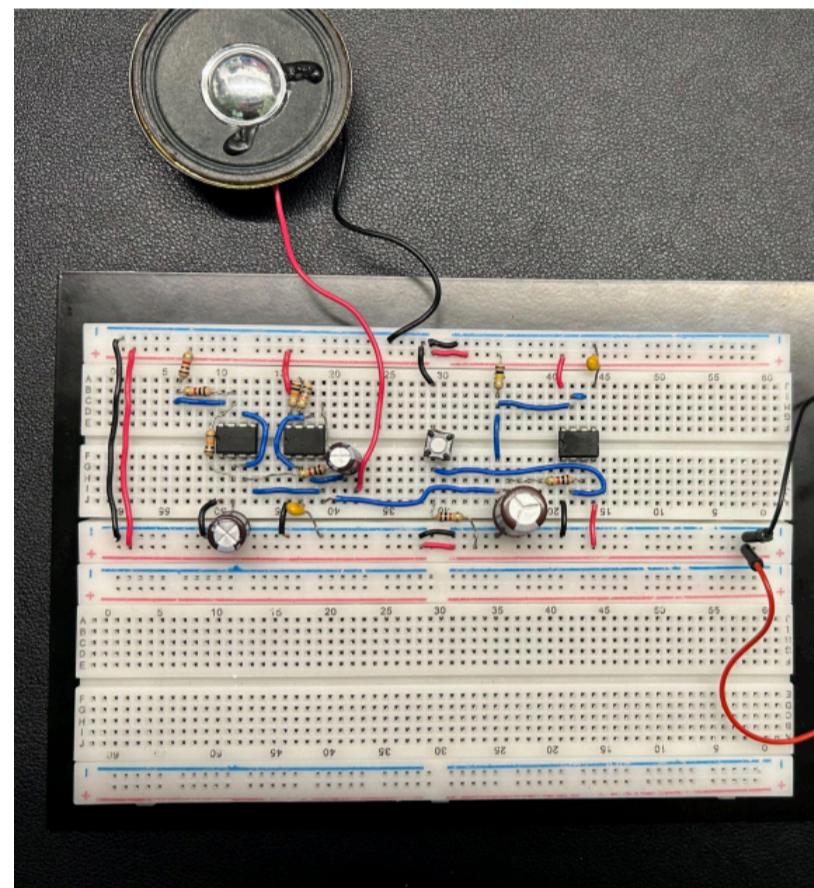


Achievements

STEAM-related

Electronics Performance Tasks

Participating in the Sec 3 Electronics Coursework Report, explicitly focusing on Design Task 1: Two Tone Police Siren, was an enlightening and challenging experience. This project gave me a comprehensive understanding of analogue circuit design and development. The process began with analysing and defining the project specifications, followed by in-depth research into transducers and circuit configurations. Simulating various circuits helped refine our design, leading to the selection of an optimal configuration. Constructing the circuit on a breadboard and iterating on the design enhanced my practical skills and problem-solving abilities. This task strengthened my technical knowledge and improved my ability to document and justify design decisions effectively.



simulations were analysed to refine the circuit design further. Finally, the project ended with evaluating the details and describing improvements. These additions enriched the project experience, fostering a more structured and insightful circuit design and development approach.

In the Sec 4 Electronics Coursework Report, additional components were integrated into the project workflow, including more in-depth testing with measurements. The Generation of Ideas (Simulation) stage expanded to include Simulation Evaluation, where the outcomes of

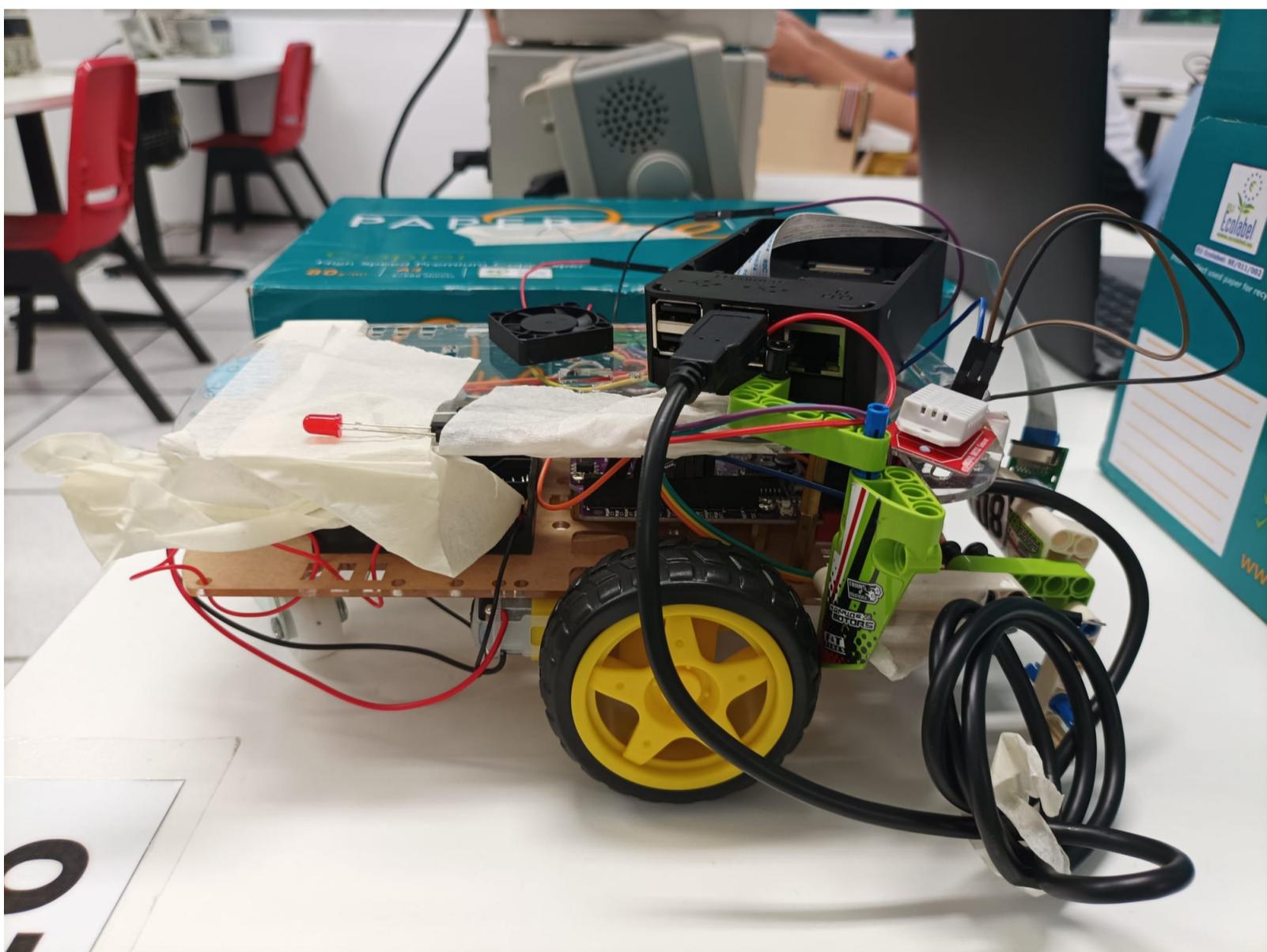


Achievements

STEAM-related

Integrated Design Challenge 2024

Participating in the Integrated Design Challenge was a transformative experience where our team developed a specialised vehicle for disaster management and supply operations. We meticulously crafted a line-tracing robot, addressing mobility, sensing, and communication integration. Through interdisciplinary collaboration in computing, design studies, and electronics, we gained insights into robotics and deployed more advanced technology like machine learning models with Raspberry Pi and Arduino integration. This endeavour highlighted the significance of collaborative innovation in solving real-world challenges.





Achievements

STEAM-related

Big-D Camp 2024

In the Big-D Camp 2024, my team and I built “Pagio”, an automatic page-turner that would assist people with arthritis or other related physical disabilities in turning pages on a book. Receiving the Certificate of Participation for completing the Big-D Camp 2024 was a valuable recognition of my dedication to design thinking and innovation. The camp, organised collaboratively by the Singapore University of Technology and Design, Ngee Ann Polytechnic, and the School of Science and Technology, provided me with practical experience in problem-solving, creativity, and interdisciplinary collaboration. This certificate serves as a reminder of the skills and knowledge gained during the camp, which I can apply to future endeavours.



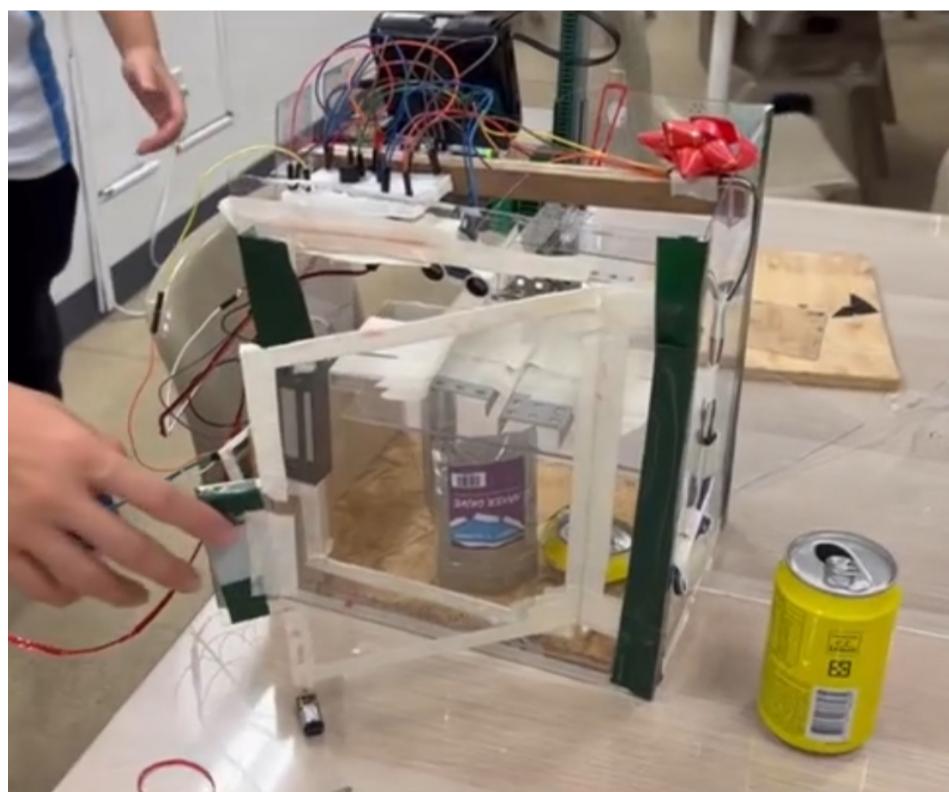


Achievements

STEAM-related

ARTC camp 2023

The ARTC camp provided practical experience in problem-solving, creativity, and interdisciplinary collaboration. In this camp, I created an automatic can crusher that allows ease of crushing, reduces the diffusion of responsibility, and allows for more convenient, easier recycling.



Can Recycling Unit with Smart Handling and Robotic Technology, “CrushBot”



Top half of the image: Pictures with my teammates

Bottom half of the image: Presentation to mentors and teachers



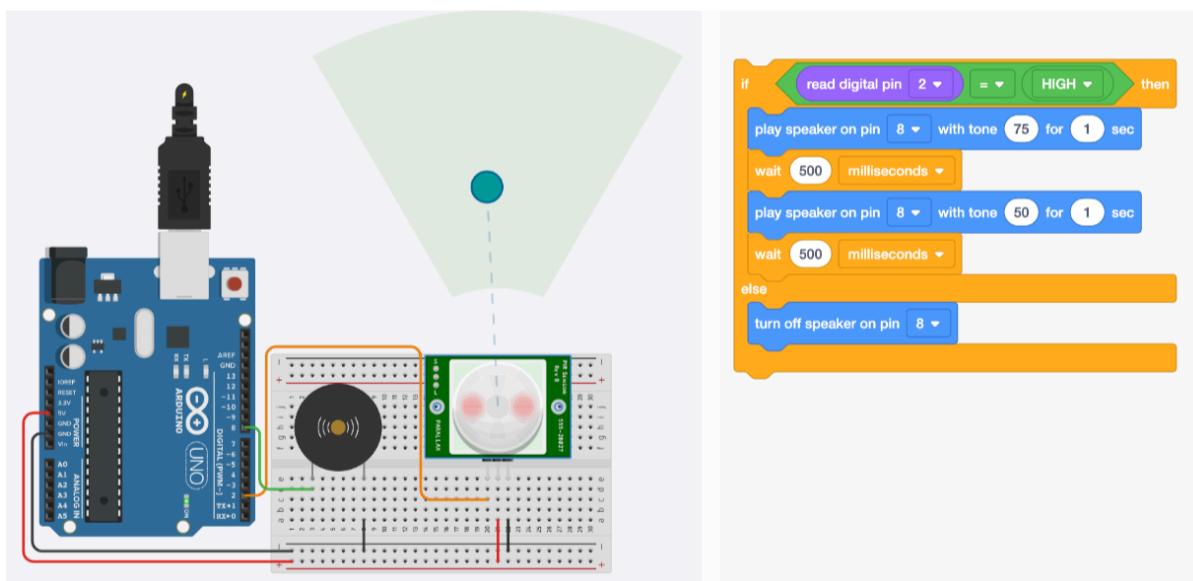
Achievements

STEAM-related

SST ChangeMakers Programme (ICT)

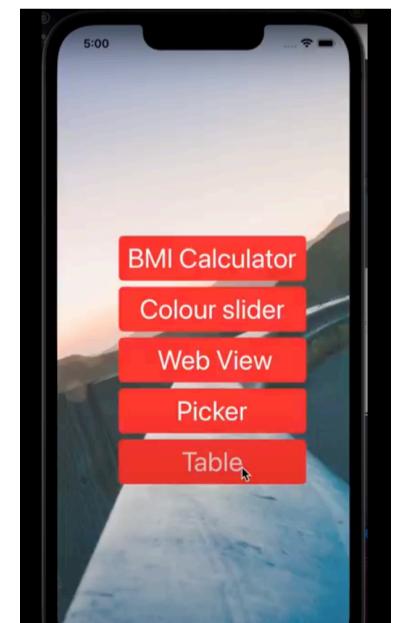
Participating in the ChangeMakers Programme was an eye-opening journey. From hands-on projects to mentorship by industry experts, I learned to tackle real-world challenges effectively. Focusing on innovation and technology, I honed my planning, designing, and prototyping skills. Culminating events like SST Innofest and 3M-SST InnoScience Challenge provided platforms for showcasing creativity and preparing for future challenges.

In the ICT programme, we learnt about Computer history, mobile photography, keynote, cyber wellness, iMovie, GarageBand, thinkable, APIs SSTuino, and Google sites.



Pre-build Tinkercad simulation of motion detection alarm

We also learnt Python, Swift and Swift in Xcode, including an building an app with a BMI calculator, colour slider, web viewer, and a Pokédex.



My X-Code app



Achievements

STEAM-related

SST ChangeMakers Programme (ADMT)

In the ADMT programme, we learnt about Architectural Design in Sketchup, UI/UX, Wireframes, fitting user needs and videography.



Wire frame for an app built for SST students



*Kickstarter Video for
a smart, recycled
collar for dogs*

You can check the
video out by
scanning the QR
Code.

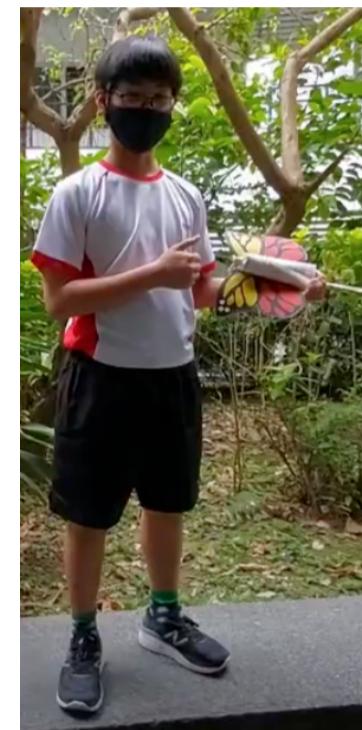


Achievements

Entrepreneurship

SST ChangeMakers Programme (I&E)

I led my team in crafting a unique 30-second TV advertisement for a toothpaste brand. Our challenge was seamlessly integrating a butterfly into the concept to make it original and captivating. Through creative brainstorming sessions, we devised a storyline where the butterfly symbolised beauty, aligning perfectly with the toothpaste's benefits. The final advertisement showcased the butterfly turning into a toothpaste tube with wings, emphasising the product's ability to bring good-looking teeth to users.



In the Innovation and Entrepreneurship program, we created reports, products and honed our critical skills and techniques through practical application and learning.

Challenge Statement (highlight the 1 your group chose):

How can we make buying of groceries in a wet market a better experience?

How can make eating in a hawker centre a better experience?

Section 1: Understanding the Challenge/Problem - Research Data

Section 1A: Empathetic Research Map (Group Work)

Copy and paste your empathetic research map below. You can cut and paste in different parts if the entire spreadsheet is unable to fit.



Section 1B: Identify the Problems (Individual Work)

Select your top 4 problems that you would like to solve.

Problem	Problem Statement (use the stem HCW, must have the verb, object and final outcome)
Problem A	How can we ensure the eaters don't struggle to keep coins in their wallet so time is not wasted when paying for food.



Report on the experience of buying groceries in a wet market

Collaborative “Save the dog” project



Achievements

Others



RSAF55 Open House Volunteer Ambassador

Serving as a Volunteer Ambassador during the RSAF55 Open House in 2023 was an honour and privilege. It was an opportunity to contribute to a significant national event while learning about the Republic of Singapore Air Force and their role in defending the country.

JA Programmes

Completing the JA Economics for Success® Program in 2021 gave me valuable insights into economic principles, personal finance, and career readiness. This program equipped me with practical skills and knowledge to make informed decisions about my future education and career pathways. Through JA Economics for Success®, I developed financial literacy, entrepreneurship skills, and a greater understanding of the economic world around me.



Successfully completing the JA It's My Business!™ program in 2021 empowered me with the knowledge and skills needed to start and manage a business venture. This program introduced me to entrepreneurship concepts, business planning, and marketing strategies. Through JA It's My Business!™, I developed creativity, critical thinking, and an entrepreneurial mindset that will serve me well in future endeavours.



Achievements

Others

Script It Right Chinese Radio Drama Script

Writing Competition 2021

Participating in the Script It Right Chinese Radio Drama Script Writing Competition in 2021 provided me with a creative outlet to showcase my storytelling skills and cultural appreciation. This competition challenged me to craft compelling narratives and dialogue suitable for radio broadcast. Through Script It Right, I honed my writing abilities, cultural understanding, and appreciation for storytelling.



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2022 Historical Scene Investigation Competition

Representing my school in the Historical Scene Investigation competition in 2022 and obtaining the Bronze Award was an enriching experience that deepened my understanding of the brutality and suffering of Singaporeans during the Japanese occupation. This local event challenged us to conduct meticulous historical research and analysis, focusing on one of the most harrowing periods in Singapore's history. We delved into primary sources, survivor testimonies, and historical documents to create a comprehensive presentation on the impact of the occupation. This competition honed our critical thinking and collaborative skills and fostered a profound appreciation for the resilience of the people who endured such hardship. Through this experience, I gained a deeper awareness of the historical events that shaped my



Service Learning

Maris Stella Kindergarten's Family Day Fundraising

Receiving the Certificate of Appreciation in 2022 for my dedicated service to Maris Stella Kindergarten's Family Day Fundraising event was a rewarding experience.

Contributing eight hours of my time on May 28th to support this event by supervising and facilitating the games allowed me to give back to the community and positively impact the kindergarteners and their families. This experience taught me the value of volunteerism, teamwork, and community



Willing Hearts

While volunteering at Willing Hearts, a charity in Singapore, I dedicated 28 hours to supporting their essential operations. Working within the soup kitchen, I took part in packaging and delivering meals to locations across the island, making a meaningful impact on the daily lives of individuals in need. Through this experience, I gained a deeper understanding of the challenges faced by older adults, the disabled, low-income families, children from single-parent households, and others in our community. It was a privilege to contribute to such a vital cause.

One moment that particularly struck me was when I saw a pair of school shoes outside one of the houses we delivered to. As a student myself, I found this sight profoundly impactful. It made me reflect on the stark differences in our daily lives and children's struggles in less fortunate circumstances. Seeing those school shoes reminded me of the resilience and determination required to pursue education despite economic hardships. It deepened my empathy and commitment to supporting initiatives that assist those in need, reinforcing the importance of community.



Service Learning

Bronze Medal at the National Youth Achievement Award in 2023

Receiving the Bronze Medal at the National Youth Achievement Award in 2023 was a significant recognition of my personal development and contributions to the community. This award symbolises my commitment to excellence, leadership, and service. It motivated me to continue making a positive impact and striving for more outstanding achievements in the future.





Service Learning

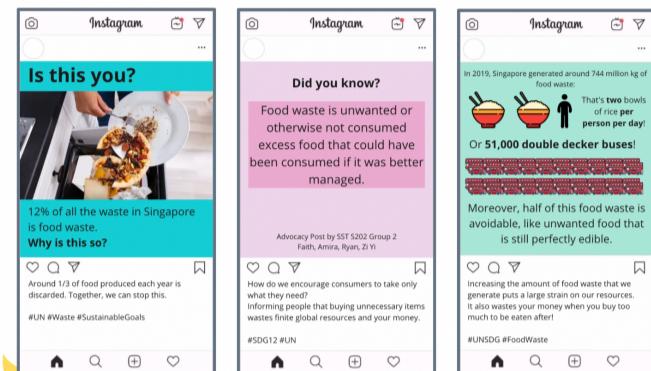
Sec 2 Learning Alliance Beyond Borders program 2022

Participating in the Sec 2 Learning Alliance Beyond Borders program in 2022 at Camberwell Girls Grammar School in Australia was an unforgettable experience. This international exchange program allowed me to immerse myself in a different educational and cultural environment, broadening my global perspective.

Interacting with students from diverse backgrounds, I gained insights into various teaching methodologies and artistic practices. The program fostered cross-cultural understanding, adaptability, and a sense of global citizenship, inspiring me to embrace new experiences and perspectives in my educational journey. In fact, this was the experience that introduced me to Canva, which I used heavily during my role as the SYFC Vice-chairperson which involved media design.



Instagram Post



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BBS Learning Journey

Participating in the BBS Learning Journey in 2023 offered me a firsthand look into the different world education systems and corporate cultures. This journey exposed me to diverse industries, business models, and career opportunities. Interactions with industry professionals and immersive experiences such as visiting the Gojek company gave me valuable insights into business operations, management strategies, and leadership principles.





Conclusion

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Attending the School of Science and Technology, Singapore has been an incredibly enriching experience, providing me with valuable knowledge in design, electronics, computing, and entrepreneurship. I have had the privilege of making amazing friends and meeting fantastic teachers and mentors who have played a pivotal role in my personal and academic growth.

As I look forward to transitioning to Ngee Ann, I am eager to connect with the outstanding educators there and hopeful for the opportunity to build similarly strong relationships.