

# JAMES RAPHAEL TIOVALEN

Email: james\_raphael@mymail.sutd.edu.sg, Mobile: +6590367415  
Portfolio: jamestiotio.github.io, LinkedIn: www.linkedin.com/in/jamestiotio

## EDUCATION

### Singapore University of Technology and Design (SUTD)

- Bachelor of Engineering (Engineering Product Development), Honours
- Preferred Focus Track: Robotics
- Expected Date of Graduation: August 2022

Singapore  
May 19 to Present

## ACADEMIC PROJECTS & SELF-INITIATED PROJECTS

### Singapore University of Technology and Design

#### V2X Implementations, Team Coordinator & Software Specialist

- Coordinating a team of 4 in simulating V2X devices and implementing the applications of V2X devices in real-life vehicles.

Singapore  
Sep 19 to Present

### Olethros Bot

#### Chief Developer

- Developing a Telegram Bot in Python with miscellaneous commands for the purposes of my current SUTD Class. Utilized Microsoft Azure for cloud deployment.

Singapore  
Sep 19 to Present

### OpenSUTD Landing Page

#### Main Developer

- Developed the landing page for OpenSUTD, an open-source movement dedicated to build a community in SUTD that embraces open sharing and collaboration. Utilized HTML, CSS and JavaScript to achieve a clean and elegant look for the webpage.

Singapore  
Sep 19 to Oct 19

### The Spread Bot

#### Chief Developer

- Developed a Telegram Bot in Python for The Spread, a café/food bar in NUS Business School, with order and payment capabilities. Utilized PostgreSQL for database management and Heroku for cloud deployment.

Singapore  
Mar 19 to Sep 19

### WhiteHacks@SG

#### Team Leader

- Participated in a 2-day cybersecurity workshop and penetration-testing competition.
- Managed to be in the top 10 out of about 50 groups (Team //TODO).

Singapore  
Feb 18

### Energy Innovation Challenge

#### Team Leader

- Designed a solar thermophotovoltaic cell prototype as a proof of concept.
- Increased the efficiency and power output of a solar PV cell by about 15% by retrofitting thermoelectric cells to the cell's posterior.

Singapore  
May 17 to Jul 17

### Arduino Weather Station Workshop Competition

#### Software Developer

- Assembled a weather station as a team of 3 from the provided components.
- Wrote Arduino code for the data collection of weather conditions around the venue.
- Obtained 12<sup>th</sup> place in terms of accuracy.

Singapore  
Mar 17

## CO-CURRICULAR ACTIVITIES

### SUTD Organisation of Autonomous Robotics

#### Vice-President

- Leading the organization of about 70 people strong together with the President with the objective of nurturing a committed robotics community by building skills to take on industry projects.
- Supervising the day-to-day operation and directing the culture, vision and mission of the club.
- Assisting the President in delegating work amongst an Executive Committee of 7 individuals.
- Working closely with the Secretary in settling administrative matters of the club.
- Monitored the logistics flow for Singapore Maker Extravaganza 2019, an external event at which SOAR showcased our club projects.
- Improved the skills and proficiencies of about 30 members of the club by organizing 6 workshops that cover robotics and other technical concepts (Solidworks, Arduino, PID, Git, Linux and ROS).
- Leading a project team in building a Stanford Doggo with a stretch goal of implementing autonomous navigation for the Doggo.
- Led a team of 10 in building a working 7 kg Linorobot with dimensions of 300x215x102mm, equipped with a ROS autonomous navigation stack.

Singapore  
Jun 19 to Present

## WORK EXPERIENCES

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**Mathvision Enrichment Centre Pte. Ltd.**

**Singapore**

**Assistant Teacher**

**Mar 19 to May 19**

- Taught Physics for the IB (SL and HL), Singapore-Cambridge GCE A-Level (H2), AT (Computational), EDEXCEL AS Level, EDEXCEL International GCSE (9-1) - Science Double Award, SAT and Cambridge IGCSE (Pure and Co-Science) syllabi.
- Taught Mathematics for the IGCSE - CIM (Core and Extended) and UKMT (JMC) syllabi.
- Rated by **75%** of students taught as **Excellent** and by **22%** of students taught as **Good**. The other 3% did not submit a rating.
- Had mastery of the content and ability to explain clearly and patiently.

## ADDITIONAL INFORMATION

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- Technical Skills:
  - ROS
  - C/C++
  - Python
  - JavaScript
  - HTML/CSS
- Language Proficiency:
  - English
  - Indonesian
- Interests:
  - Software Development
  - Robotics
  - Design Thinking
  - Teaching