Muhammad Danial Bin Kamalrudin

Mobile: +65 83660019 | Email: dragonkiller811@gmail.com | muhammad_danial2@mymail.sutd.edu.sg
|DanialMuhammad@LinkedIn|

EDUCATION

Singapore University of Technology and Design (SUTD)   **Singapore**
- Bachelor of Engineering (Engineering Product Development) - Robotics   **May 21 to June 25**
- GPA 3.81/5.0, SUTD Global Merit Scholarship Holder

WORK EXPERIENCES

Singapore University of Technology and Design (SUTD) Temasek Labs   **Singapore**
Research Study Assistant, Part Time   **May 24 to Aug 24**
- Supported rapid prototyping and assembly of multiple monocopter wing designs using laser cutters and a Zünd digital cutter.
- Successfully assembled both mechanical and electrical components for over 25 monowing copter prototypes, while experimenting with various materials and assembly techniques for display readiness and performance optimization.
- Optimised Wing Design using in SolidWorks CAD modeling software for manufacturing using laser cutters and Zund Digital Cutters.

Korvis Automation   **Singapore**
Mechanical Engineering, Intern   **Sep 23 to Dec 23**
- Gained hands-on experience with machine integration processes and factory acceptance testing (FAT).
- Presented project updates directly to senior management during weekly meetings and contributed to interdepartmental discussions.
- Introduced 3D printing into the prototyping workflow, significantly improving the speed and efficiency of troubleshooting during machine integration.
- Supported the integration and testing of a new automation system using rapid prototyping techniques.

Singapore University of Technology and Design (SUTD) Temasek Labs   **Singapore**
Research Study Assistant, Part Time   **May 22 to Aug 22**
- Improved proficiency in SolidWorks by designing and prototyping electronic component mounts integrated into drone systems.
- Contributed to the rapid prototyping and assembly of multiple monocopter designs using various fabrication tools.
- Participated in live flight tests with senior team members and actively provided design feedback, leading to further refinements and performance improvements.

PROJECTS

AroborArm (FYP) – Drone Assisted Object Recovery   **Singapore**
Project Lead, Drone Expert   **Sep 24 to May 25**
- Problem Statement: How might we develop a safe and efficient retrieval system for landscaping personnel to access and collect items from elevated areas, reducing the risks associated with manual retrieval methods?
- Led a multidisciplinary team to develop a UAV-based solution for safe and efficient retrieval of objects from elevated areas, targeting landscaping and maintenance applications.
- Designed and built a custom drone platform capable of retrieving objects from tree canopies, adhering to Singapore's UAV regulations.
- Oversaw project planning, delegated team responsibilities, and ensured all milestones and deliverables were completed on schedule.

HEDGE – Helium Enhanced Drone Guide   **Singapore**
Project Lead, CAD Specialist   **Sep 24 to May 25**
- Problem Statement: How might we assist travelers with a short layover get to their connecting flight on time without using more airport manpower?
- Led a multidisciplinary team to develop an aerial robot guide designed to assist travelers during short layovers by navigating indoor airport environments autonomously.
- Designed and built a helium-assisted drone prototype to extend flight time, reduce noise, and improve efficiency tailored to airport conditions.
- Conducted CAD simulations to evaluate product performance and stability under high wind scenarios.
- Managed project planning, delegated tasks, and ensured timely completion of all deliverables.

COMPETITIONS

Singapore Amazing Flying Machine Competition 2024   **Singapore**
Cat E and D Team Coordinator, Senior Advisor   **Dec 24 to Apr 25**

- Won 1st Place in the Cat D1 Category.
- Achieved Judge's Commendation for Cat E Swarm Category
- CADed and Designed New Controller Systems for Cat D1 category
- Advised new team members on strategies and design optimisations for competitions

Singapore Amazing Flying Machine Competition 2024   **Singapore**
Cat E and D Team Coordinator, Designer   **Dec 23 to Apr 24**

- Won 1st Place in the Cat D1 Category.
- Achieved Judge's Commendation for Cat E Swarm Category
- CAD new frame and mounting design in the Cat E category and Cat D Pickup mechanism.
- Lead teams in ideation of new designs, optimizing strategies, managing logistics and schedules

Singapore Amazing Flying Machine Competition 2023   **Singapore**
Cat E Team Coordinator   **Dec 22 to Mar 23**

- Assisted in strategizing and planning between teams.
- Coordinated with the advisor to book venues for training and testing.

Singapore Amazing Flying Machine Competition 2022   **Singapore**
Team Member (Hardware)   **Dec 21 to Mar 22**

- Won 1st Place in the Cat E Swarm Category.
- Thought of creative ways to improve the efficiency of the drone, extending its flight time, and optimizing the ideal formation to minimize the drift in the swarm.
- Assisted the team in strategizing plans to increase the number of points.

RoboClash 2023   **Singapore**
Team Member (Coach)   **Jan 23**

- Won 1st Place.
- Directed the drivers of the team to prioritize specific objectives to overcome opponents.
- Coordinated with other alliance members to create a strong cohesive strategy.

What The Hack Hackathon   **Singapore**
Team Member (Hardware Specialist)   **Dec 22**

- Won 1st Place in Healthcare Category.

- Designed and prototyped winning product design.

CO-CURRICULAR ACTIVITIES

Electric Vehicle (EV) Club   **Singapore**
Vice President   **April 22 to Mar 23**

- Organised and planned various EV-related design and tutorial workshops i.e. 3D Printed RC Workshop, Go Kart Workshop
- Lead the Frame Team on J23 Go Kart Design Project
- Assisted with Electric Vehicle Additive Manufacturing (EVAM) Project Testing

SUTD Open House Committee   **Singapore**
Project Director Fifth Row Showcase   **April 22 to Mar 23**

- Planned and coordinated an Open House Showcase with over 400 volunteers to share with the public about student life at SUTD.
- Assisted the Office of Marketing in creating a floor plan to accommodate the needs of over 50 student organizations.

ADDITIONAL INFORMATION

- Hardware Skills: Laser Cutting, CNC Milling, Soldering, 3D Printing.
- CAD Software: Solidworks, Fusion 360
- Programming languages: Python
- Language: English (Native), Malay (Native)
- Nationality: Singaporean