

# Lek Man

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## INTRODUCTION & OBJECTIVE

Hi, I'm Lek and I have a huge passion for engineering, particularly in mechatronics. I'm eager to join Triton Robotics so I can meet and make friends with members who share this passion. I wanted to contribute my skills and knowledge to your club in making cool robots, while having lots of fun.

As a freshman, I also recognize that I still have a lot to learn, so I hope to further develop my current skills by spending time with seniors in the club who are more competent than me.

## EDUCATION

### University of California, San Diego (Current)

Freshman | Aerospace Engineering Major | GPA: 3.6

### Christian Alliance International School

Grade 7-12 | GPA: 3.75

## TECHNICAL SKILLS

**Computer Aided Design** (Fusion360, Onshape, SketchUp) | Proficient

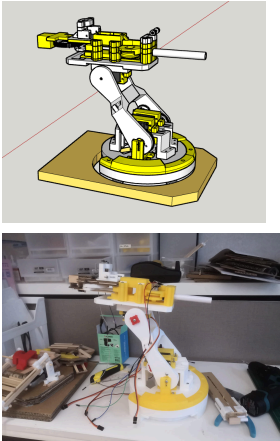
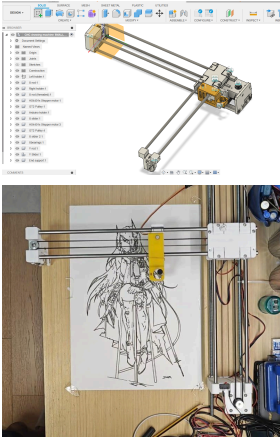
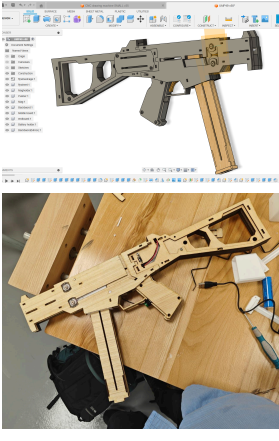

**Programming** (Python, Javascript) | Proficient, (C++) | Beginner

**Operating 3D printers, laser cutters, resin printers, power tools** | Proficient

**Soldering** | Proficient

**PCB design** (Altium) | Beginner

## PROJECTS

<b>Robot Turret (6 weeks)</b> Arduino robot turret that shoots paper darts, controlled with a pyqt6 laptop app	<b>CNC Pen plotter (5 weeks)</b> Arduino CNC Drawing machine that can draw line art, with GRBL firmware	<b>MDF UMP49 TOY GUN (3 weeks)</b> Laser cut plywood toy gun that shoots paper darts	<b>DRONE (WIP)</b> Arduino powered drone that can fly (it is not complete yet)
			

**Ball-balancing machine**

**Pen plotter**

**Robot turret**

**TUAS:**

- **Antenna tracker**
- **Camera gimbal**
- **Quad 1,2,3,4 (Drones), RC plane**

## EXPERIENCES

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**Leader/founder** | Mechanical Engineering Club, CAIS | September 2022 to June 2024

- Founded and served as the President of the Mechanical Engineering Club for 2 years, leading a team of 30 members in organizing/participating in school events to promote interest and engagement in the field of mechanical engineering.
- Utilized strong organizational, communication, and project management skills to oversee club operations -- such as managing budgets, initiating club activities, club promotion and recruitment, and communicating with faculty advisors and school administration.
- Demonstrated a strong passion for mechanical engineering and a commitment to promoting the field to a wider audience, contributing to the growth and success of the club during my tenure

**Software + Hardware + Electrical** | Team Member, Triton Unmanned Aerial Systems | UCSD | Sept 2024 – Present

Fabrication & CAD:

- Layup composite airframe (fiberglass & carbon fibre) using epoxy resin bonding.
- Designed & 3D-printed mission-critical components: 2-axis camera-gimbal mount (with vibration isolation), antenna-tracker bearings, motor-jigs.

Embedded Systems & Electrical:

- Wrote ESC firmware on STM32 G431B-ESC1: acquired IMU data over I<sup>2</sup>C, implemented FOC + PID motor control.
- Developed antenna-tracker firmware; boosted pointing accuracy via Python-driven magnetometer calibration (ellipsoid fitting).
- Designed PCB for ICM-40690 IMU and integrated Hardware-in-the-Loop (HIL) testing.

Software & Autonomy:

- Configured open-source flight stacks (Betaflight, ArduPilot) for fixed-wing UAV and quadcopters.
- Contributed to CV-based localization: computed object GPS coordinates from image offsets and UAV GPS.

**Student presenter** | ACAMIS technology conference | 18th March 2023

- Participated as a student presenter in the ACAMIS technology conference and delivered a presentation based on the topic "empowering learning"
- Delivered a dynamic and informative presentation to an audience of educators and administrators, utilizing effective speaking to convey key messages.

**Main designer** | Greendeck VR Competition | 2021-2022

- Participated in a one-year-long competition to create a virtual interactive 3D model of the green deck in Hong Hum.
- Worked in a team of 4 students to successfully plan and design a 3D model of the green deck park in Hong Hum during summer.
- Attended training lessons for software such as Unity and SketchUp, before applying these skills to create the final product submitted to the competition.
- Won the champion of the competition.

## AWARDS

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**Student Unmanned Aerial System competition (SUAS) top 25% | UC San Diego | 2025**

- Participated in SUAS competition involving 81 teams/universities achieved top 20% mission demonstration score
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- Contributed significantly design of mission critical projects, particularly the antenna tracker used to ensure signal integrity between aircraft flight computer and ground station, thus responsible for the team's outstanding performance

**Cayley contest top 25%, School Grade Champion | the University of Waterloo | 2022**

- Participation in the mathematics Gauss contest and achieved the top score in the school grade, with a top 25% score among worldwide contestants.

**Champion, Greendeck VR Competition | Technological and Higher Education Institute of Hong Kong | 2021**

- Participated and won the championship of the Green Deck VR Competition with a group of 4 students, among the 12 schools who have participated.
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