# LAU YU DA

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## EDUCATION

**National University of Singapore** Aug 2016 - Jun 2020

- Bachelor of Engineering (Honours) in Mechanical Engineering (Distinction)
- Innovation & Design Programme
- American Bureau of Shipping (ABS) Scholarship
- Overall CAP: 4.39

**NUS FintechSG Programme** Oct 2020 - Nov 2020

- Professional Certificate in FinTech Associate (Level 1)
- Professional Certificate in FinTech Developer (Level 2)
- Professional Certificate in FinTech Senior Developer (Level 3)

## WORK EXPERIENCE

**UBS** Nov 2020 - Now
*Group Technology Trainee (SGUnited Traineeships Programme)* *Singapore, SG*

- Pursuing MiniMasters in Business and Financial Analytics at Nanyang Technological University.
- Working to implement a single pane of glass dashboard to monitor health of enterprise tools.
- Liaised with international colleagues from Poland and India to understand key metrics for the different tools to be displayed on aforementioned dashboard.
- Researched deep tech market and ESG impact within APAC to recommend to UBS shelf of products.

**National University of Singapore** Jan 2020 - Apr 2020
*Teaching Assistant* *Singapore, SG*

- Led groups of up to 40 students in EG1311 Design & Make laboratory sessions.
- Guided EG1311 students to design a rover in overcoming three obstacles using AutoCAD and Arduino.
- Tutored two classes of 40 for ME2102 Engineering Innovation & Modeling on SolidWorks concepts.
- Proctored practical examinations for two ME2102 laboratory sessions.

## PROJECTS

**Portfolio** Ongoing
*https://lauyuda.github.io/*

- Developed roboadvisor based on supervised learning algorithm to predict user risk tolerance and implemented interactive dashboard using Dash.
- Applied anomaly detection machine learning methods on credit card fraud dataset using Scikit-learn.
- Conducted Monte Carlo simulation and technical analysis for virtual client portfolio using Python, NumPy, and pandas library.
- Created a virtual banking web app using D3.js for graphical visualisation on ReactJS for frontend.
- Constructed database schema for the virtual bank and ran MySQL queries with Node.js at the backend.
- Implemented trading algorithm using MACD, EMA, and trailing stop loss on QuantConnect to achieve 1.91 Sharpe Ratio on backtested results.
- Adopted design thinking methodology for Grab drivers to make a mid-career transition on the Grab app and prototyped proposed new features and services using Adobe XD.

**NUS Formula SAE** Jun 2019 - May 2020
*Team Leader & Chassis Engineer*

- Performed data analysis on previous competitions to identify key areas of improvement.
- Organised competition timeline and led team of 15 members to resolve problems and work effectively on tight timetables.
- Secured S$33,000 worth of product sponsorship with S$18,000 from 8 new partners.
- Spearheaded revolutionary switch to carbon fibre monocoque since inception of project in 2001 to achieve initial 14.4% performance-to-weight improvement.
- Collaborated with 10 other race car departments to design chassis.
- Sourced and established new supply chain for feasibility of monocoque manufacturing.
- Acquired new testing ground with sponsored land lease worth S$21,000 to increase race car testing, tuning, and driver training by 80%.
- Organised team's first volunteer work with North East Community Development Centre.
- Develop sound business communication by building relationships with sponsors through appreciation event.

**NUS Formula SAE** Jun 2018 - May 2019
*Ergonomics Engineer*

- Overall ranking 13th out of 120 teams worldwide and 4th in Engineering Design Finals.
- Obtained S$6000 worth of cash sponsorship from a new partner to fund overseas expenses.
- Conducted ergonomics study to quantify comfort and driving effort of race car.
- Designed and manufactured composites racecar seat for 95th percentile male to 5th percentile female.
- Devised a new method to estimate changes in the Centre of Gravity of driver due to seat angle.
- Mentored nine sophomores on designing and manufacturing of racecar accessories.

**NUS Fixed Wing UAV Team** Jul 2017 - Jan 2018
*Fuselage Lead*

- Conceptualised, fabricated, and tested a remote controlled aircraft from scratch.
- Modelled a score sensitivity analysis for American Institute of Aeronautics and Astronautics Design/Build/Fly competition to determine critical areas to focus on.
- Developed estimation of flight performance and characteristics for optimal performance.
- Created Excel to calculate wing spar loading to size wing spar for weight optimisation.

## SUPPLEMENTARY INFORMATION

**Formula Society of Automotive Engineers (FSAE)**
FSAE is an inter-varsity competition in which undergraduates design, build and test Formula-style race cars and compete with more than a hundred universities from all around the world. In May every year, the NUS team will fly to Michigan, USA for the annual FSAE competition.

The team not only have to go through dynamic events such as acceleration and endurance, the students will also pit their skills in static events such as engineering design presentation, cost evaluation and marketing strategies.The car specifications must conform to all the rules in the FSAE rule book which exceeds 100 pages.

**Design/Build/Fly (DBF)**
The DBF Student Competition is intended to challenge the AIAA student branches of each university to design, build, and fly a remote controlled airplane that can complete specific ground and flight missions. Additionally, the teams are required to submit a comprehensive design report detailing the most important aspects of their designs.