



THE HONG KONG  
POLYTECHNIC UNIVERSITY  
香港理工大學

FACULTY OF  
ENGINEERING  
工程學院

WHERE CONCEPTS BECOME REALITY

# JOURNEY

- NEWS LETTER -

#04  
11/2022

# POLYU E-FORMULA RACING TEAM



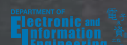
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工業中心



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航空工程跨領域學部



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電機工程學系



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DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING  
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Department of  
MECHANICAL ENGINEERING  
機械工程學系

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# Alumni Sharing

## Chung 01E Founder of PERT and Captain



## ABOUT ME

I'm Chung, founder of PERT. Drifting, rallying, racing have been very attractive sports to me since I was a kid. When I had the idea of founding this team, I thought it would be an exciting and memorable way to end my undergraduate life.

I didn't know how much this impacted my life and the others'. I enjoyed every moment in the team but not because I designed race cars but because we worked as a team and pursued the same goal which was truly amazing.

## CARRER

I am currently working at Mercedes HPP in the ERS Mechatronics Team, where I'm in charge of the mechanical design of the upcoming MGU and ERS system.

I graduated from PolyU in 2017 and spent two years working for two automotive companies in Hong Kong. FRD motorsports came in first, followed by HKPC APAS. During my 4 years in Hong Kong, I worked on a variety of projects to broaden my skill set, including Perrinn 424 and Intelligent Motion ebike development.

In the future, I hope to learn as much as I can about the F1 industry and, one day, work full-time for my own company.

## WHY FORM PERT?

PERT was founded by me in 2015. I started the project with the help of eight more Mechanical engineering students.

The main reason I started team was because I wanted to use this project to summarize what I had learned over the previous four years, and I knew this project could help me get there. After a year of hard work, we grew from 9 to a 40-person team comprised of students from various departments

# HOW DID PERT CONTRIBUTE INTO MY CARRER

I'm sure I won't be able to work in F1 if I don't start PERT. Formula Student is a scaled-down version of Formula One. As a student team, we were essentially involved in all aspects of a formula one team, including design, build, testing, management, logistics, finance, and so on. This experience will help you understand the industry better.

Working as a formula student requires you, as an inexperienced engineer, to apply what you've learned in class and turn it into reality. You will never face actual material failure in the class, and you will never understand component design considerations.

During my PERT years, I learned 3D modeling software such as Solidworks. Ansys structure and Ansys fluent are two mechanical simulation softwares. These experiences and skill sets are essential in the automotive industry.

In the few years of PERT, I learnt 3D modelling, such as Solidworks. Mechanical simulation softwares, such as Ansys structure, Ansys fluent. These experiences and skill sets are crucial in working in the automotive industry.

Apart from skills and engineering knowledge, PERT has provided many valuable memories and friendships. PERT represents the craziest, most fruitful, and enjoyable period of my young life for me. Working together as a team, with passion, and happiness were the top things that made me want to wake up every single day during my final year. Every day since I graduated, I've been missing that moment.

## MESSAGE TO ALL SUPPORTERS, SPONSORS, TEACHING FELLOWS:

This message cannot express how grateful I am to all of you for your support of PERT since 2015. I met so many people and businesses who were willing to help us without expecting anything in return. I couldn't have formed the team without your help. We couldn't have gathered this many students and pursued our dream without the sponsorship. Your generosity not only provides students with a component or funds to complete the project but also encourages all of the young engineers to believe in themselves and move forward.

Finally, I'd like to thank Dr. Tong, Elsa, the IC director, Dean, and sponsors for their previous support to me in the past. Without all of you, I would not be able to work in this amazing company and design the world's fastest racecar. Without all of you, I wouldn't able to work in this amazing company and design the fastest Racecar in the world.

Words to the current and future PERT team members.

I'm happy to see the team is still active and has carried the spirit from the past to the present. As an alumni, I can tell you all that your effort you put into the team is worth 10 times you think it is. PERT is the place where you can have a lot of freedom in engineering design without having too much of financial consideration. Working in PERT does not lead you to formula One, but it is the first big step in the right direction. Joining PERT also doesn't mean you need to work in automobile industry in the future, but the engineering mindset, skills, knowledge, and problem-solving techniques are all transferable to your future career.

Last but not least, I wish you find your value, your passion friendship, and the things that give you goosebumps in your life during your time in PERT.

# Alumni Sharing

**Jason 03E**

**Captain and Electrical & Electronic Team Lead**



## ABOUT ME

I am Jason, I am currently working as a Motor Controls Graduate at Mercedes AMG High Performance Powertrain (HPP). I joined the team in 2017 and completed my BEng in EIE at PolyU in 2019. After wrapping up the 2019 season as Captain and Electrical and Electronic Team Lead, in 2020 I started working in the company that sponsored and developed our 2019 season motor control unit.

I started my MSc in Automotive Mechatronics in Cranfield University in the UK in 2021 and joined HPP in September 2022.

My free time interest revolves ACG culture and science content online in general and I enjoy a good laugh looking at funny animal videos.

## WHY DID YOU JOIN PERT?

I've always enjoyed putting things together, from playing with Legos as a child to putting together my own computer as a teenager and fixing electronics at home, so when an electrical member of the team asked if I wanted to work on the first ever electric formula student race car in Hong Kong, I couldn't say no.

## TAKE AWAY

It was not easy but definitely a fruitful one, being in a newbie team and the first one in the region means there's a lot to learn. It is a process of trial and error on both the individual and team levels.

In 2017, as a team, we slept on garage floors in Xiangyang, China, doing everything we could to get the car to a competition-ready state. The competition was delayed due to a flood at the race circuit, so we flew back in November to continue and we finally got the vehicle on track for the endurance event at the last moment.

In the 2019 season, I faced the challenge of securing sufficient funds to sustain the team's spendings, which required me to visit and present to various potential sponsors, as well as work with sub-team leads to encourage them to do the same.

# WHAT DID YOU LEARN?

Working in a large team has made me used to having work being planned, written down and shared with others. This facilitates communication and collaboration, and is an essential skill and mentality to have working in the industry.

Seeking sponsorships has also helped establish my abilities to interact with people outside of my own age group or social circle, as well as understand what qualities the industry values in graduates and from academy in general.

Technical skill is something that I find grows with the amount of time I put into honing it and there is just no way around it. Being in the Formula Student team means the work I do has a purpose, solving an actual technical problem, with a time target to hit, and that gives me motivation to push myself to get over the challenges I face. For the roles I have been in the team, there were an abundance of opportunities to design, build and test embedded electronics, control software, automotive electrical systems. Not to mention vehicle test sessions which can be headaches but at the same time provides great opportunity for problem diagnosis and data analysis, e.g. identifying powertrain/control system responsiveness problems, capture and extract chassis dynamics data, etc.

As I worked alongside with many team members that have a different background from me, I also gained knowledge on mechanical structural design and fluid dynamics, further widening my scope of learning.

## HOW DID PERT CONTRIBUTE INTO YOUR CARRER?

PERT was a platform and environment for me to put myself forward to those challenges I mentioned. By doing so I acquired experience and skills that I can further specialize in my MSc studies, shaping myself a competitive candidate for the potential employers.

For example, the modeling of Vehicle Control Unit software is based on Simulink, I further developed this skill in my MSc course modules, and is continuing to use it in HPP. The internship that I had through the team with our motor control unit sponsor in 2018 allowed me to extensively hone my PCB designing and testing skills through the development of the module.

Although electronics design is not exactly the day-to-day scope that I now work on, the assessors did express that they thought this is an advantage I had in terms of general knowledge of a motor controller.

## WILL YOU RECOMMEND PEOPLE TO JOIN PERT?

If you are just “coming for the ride”, look elsewhere - the racer is a one-seater, but jokes aside if you are just looking to add another line to your CV, that would not benefit anyone including yourself since the interviewer will know as soon as they ask you questions about it.

If you are in your final year or is already engaged with other activities that takes up a lot of your time and are not ready to give those up, I would advise against joining the team since the benefits of joining the team takes time to develop and would not be the best use of the little remaining time you have at the university.

If you need to be told what to do all the time or can never stick to doing the things you planned to do to achieve your goals, you will need to evaluate how determined you are to change that around, or else you will not be excelling in this environment where self-motivation and self-exploration is key to finding personal success, any resources or help the team can provide are just wasted tools laying around if you don't pick them up and use them.

However, if you wish to be career-prepared by materializing your knowledge into a functioning piece, if you are not afraid of failing despite the hours you put into your work, if you wish to collaborate with dozens of other like-minded, hardworking individuals to crystallize all of your sweat and tears into something that you will be proud of, PERT will be the training ground for you.

I would especially recommend freshman and sophomores to join as early as possible to provide themselves sufficient time to be exposed to the various areas of the team to gain the breadth of knowledge the team has to offer and then pick one to specialize into.

Even if your career goals are not exactly with the automotive or motorsport industry, you will find yourself developing transferable skills through out the journey.

# TEAM UPDATE

SEPTEMBER



**Members Recruitment**  
Start of the 2022 Season

SEPTEMBER

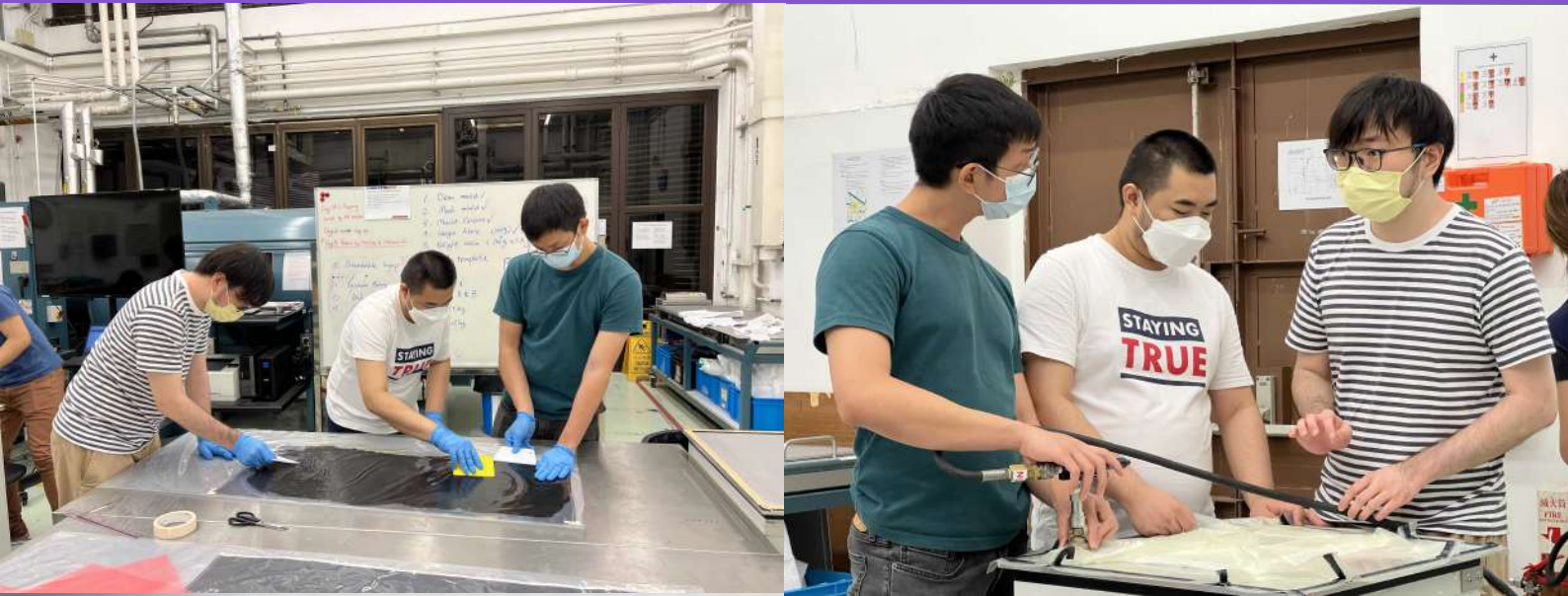


**NHH (Ngai Hing Hong Company Limited)**  
Sponsor Visit

click to visit:

**NHH**

SEPTEMBER



Carbon Fibre Workshop

OCTOBER



Engineering Training Session

*and we keep working...*

*Thank you all  
for sponsoring us throughout the seasons!*



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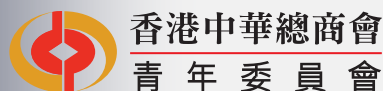
侯勵存醫生  
*Dr Hou Lee Tsun*  
*Laurence*

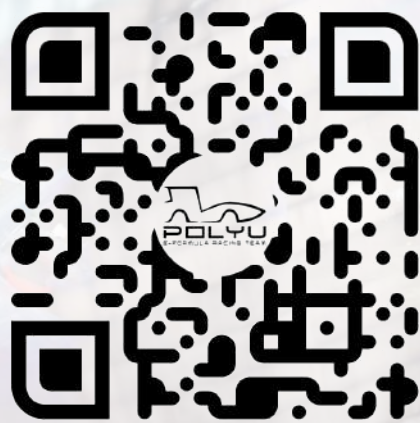


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*DREAMS INTO REALITY*



Publisher **PolyU E-Formula Racing Team**

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Cover Photo **2018 Photoshoot**

Editor **Cristina Ng**