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ETH Robotics Summer School

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Subject: ETH Summer School

Dear Nubert,

I am a master's student studying at KAUST with a full scholarship. I have published and presented a long paper to the AAAI workshop, published one first author paper to ECCV 2022 and one first-author paper to NeurIPS 2022, and had a deep understanding of the direction of my research about **3D deep learning** and **few-shot learning**. Besides, I am good at interchanging ideas with talents in various fields and various cultures. International cooperation, solid academic atmosphere, and innovative culture indeed leave a deep impression on me. **It furthered my belief that the ETH Robot Summer School can achieve my willingness to live and study where I have always dreamed of.**

As a student with **rich interdisciplinary research experience**, I am highly qualified for the summer school. When I was in high school, I won the 1st prize in Physics Olympiad and the third prize in Informatics Olympiad. I did my Bachelor's Degree in Computer Science at SUSTech and have done three research programs in different laboratories.

Firstly, from my first year at SUSTech, I joined the **Medical Image & AI Diagnostic** laboratory and mainly focused on researching a deep-learning-based system that examines retinal fundus photos for various eye conditions. I completed two projects independently. One project is the development of software for corneal ulceration segmentation. The other is using the convolutional neural networks for detecting and classifying images of diabetic retinopathy selected as the **National University Students' Innovation & Entrepreneurship Training Program**.

Secondly, I served as the leader of a team aiming to accelerate the prediction process by machine learning and statistical methods in the **digital manufacturing laboratory at Tsinghua University** last summer. We finally developed an intuitive way to segment the edges of morphology and some novel image processing approaches for data augmentation.

Thirdly, my teammate and I designed an age estimation algorithm based on multi-task neural processes as an advanced computer science experiment at the **deep learning & computer vision laboratory at SUSTech**. We applied neural processes algorithms in an age estimation

system and wrote the web application for it using the flask framework. In the final evaluation, our group received a score of 91, **placing us in the top 10% of the class**.

Moreover, there have been three industrial internships in my college time. One is at **Tencent** as a software engineer for data analysis. One is the **Summer of Code** Program regarding Apache RocketMQ (a big data messaging connector) at **Alibaba Group**. I am enthusiastic about open-source and also a contributor to Apache RocketMQ JDBC Connector. Another is at iFLYTEK, a well-known intelligent speech and artificial intelligence company; I am a researcher there and focus on personalized education recommendations for English reading comprehension. Due to these extensive experiences, I am confident in my programming ability. I did further research and progress in the Visual Computing Center at KAUST. I will continue fortifying my dreams and interests in the developing fields of computer science, such as **visual computing, 3d deep learning, machine learning**, hoping to make some breakthroughs in these fields.

I will continue **working in academia**. Upon attending from the Summer School, I will have adequate research experience, outstanding academic ability, and professional knowledge and skills, beneficial to my future development. I will continue to do relevant research at institutes to contribute to human wisdom and cutting-edge science, making our world more convenient and better using advanced technology.

I firmly believe that my **extensive research experience** and **strong academic ability** make me a fully suitable participator for the program. I am greatly looking forward to visiting ETH Robot Summer School, as I will have the opportunity to meet old friends, make new friends with peers from across the globe, and keep on working hard to fulfill my dream.

Sincerely

Yuchen Li