



30 March 2022

I am very pleased to recommend Mr. Runyao Yu for starting his PhD journey in your prestigious university. He is a very promising young researcher in the fields of applied artificial intelligence. Despite of his young age, he has already played a vital role in several projects on battery thermal management systems, tax information retrieval, supplier and customer behavior analysis, and chip modules optimization, etc. Through the research project at TU Kaiserslautern, he has investigated the modeling and control of multiple grid-forming inverters, where he developed useful algorithms and showed strong mathematic abilities. Despite my work with over 20 undergraduate researchers, I have never witnessed such a level of diligence, curiosity, and creativity. He leveraged the mathematical theories to solve several practical engineering problems. Based on my experience with him and his work ethics, motivations, as well as ideas, I see him being an outstanding researcher in the future.

I just landed a full professor position at the School of Control Science and Engineering of Shandong University. Prior to that, I was a postdoctoral researcher at Duke, where I supervised a couple of undergraduate and graduate students. I got my Ph.D. degree from the School of Electrical and Electronic Engineering at Nanyang Technological University in Singapore. In addition, I have visited the Aalborg University and TU Kaiserslautern. My research interests include power quality control, stability analysis and improvement, renewable energy integration, and digital control in more-electronics power systems. From these, I can refer to more than 70 peer-reviewed publications and 6 patents. I am a recipient of the Humboldt Research Fellowship, two IEEE Prize Paper Awards, one Best Presenter Award, and the Best Thesis Award from NTU in 2019.

One of Mr. Yu's research project focuses on the anomaly detection of power modules using artificial intelligence, which is innovative, promising, yet challenging. The anomaly of chip modules is difficult to detect due to the complexity of chip layout and real-time oscillation. However, Mr. Yu took advantage of AI flexibility and proposed extremely efficient and effective detection strategies. This is a milestone in the process of the patent filing and article publication. His research project will continue to contribute to our field.

In conclusion, it will be a particular pleasure and honor to help Mr. Yu find his way, and I strongly support his applications. Please do not hesitate to contact me in case of any question.

Sincerely,

A handwritten signature in black ink, appearing to read "Jingyang Fang".

Jingyang Fang | jingyangfang@sdu.edu.cn | Professor
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