

DEPARTMENT OF COMPUTER SCIENCE

SEMINAR

2024 SERIES

# On-Device Personalized AI for Better Healthcare

## DATE & TIME

22 FEB 2024 (THU) 9:30 AM - 10:30 AM

## ONLINE VIA ZOOM



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### ABSTRACT

The rise in chronic diseases, combined with an aging population and a healthcare professional shortage, has driven the extensive use of mobile and implantable devices for effective management of diverse health conditions. Recent years have seen burgeoning interest in exploiting the rapid advancements in artificial intelligence (AI) to augment these devices' performance. This development leads to improved patient outcomes, reduced healthcare costs, and enhanced patient autonomy. However, due to individual differences, a one-for-all AI model cannot always provide the best performance, and personalized AI is demanded to tailor the model for each individual. In addition, compounded by the privacy, security, and safety constraints, model personalization must often be done on the medical device with limited hardware resources. In this talk, I will first illustrate the resource sustainability issues in the development of AI/ML for health, and demonstrate our proposed on-device personalized AI techniques that can potentially transform the landscape of implantable devices. Additionally, I will showcase the world-first TinyML design contest for health organized at ICCAD 2022 and the next-generation Implantable Cardioverter Defibrillator (ICD) design enabled by our research.



**SPEAKER'S  
BIOGRAPHY**



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