Joint CQSE and CASTS Seminar

2020
September 25, Friday

TIME   Sep. 25, 2020, <u>2:30~4:20pm</u>
TITLE   An Easy Guide to Designing Quantum Computers.
SPEAKER   Eric Kao
               Senior Consultant, Formosa Plastics Corporation;
               Visiting Specialist, Academia Sinica.
PLACE   <u>Rm104, Chin-Pao Yang Lecture Hall,</u>
               CCMS & New Physics Building, NTU

Introduction

      In this 2-hour seminar, I try to demystify hardware of quantum computer. Though this subject is hardware oriented, I will quickly review quantum mechanics and principles of quantum computing with only important and related ingredients. Then I will dive into superconducting qubit architecture. Superconductivity will be briefly mentioned. Qubit measurement (readout) will be more emphasized than rest of subjects. I believe that once operations of readout is understood, the rest of subjects such as 1-qubit and 2-qubit operations are relatively easy. There will be many pictures showing how a current hardware development look like. I will also touch the related industries. Though math is inevitable, I will attempt the minimum and not go into detail steps. This seminar is to get audience interested in QC hardware, or at least, give them a take-way of how QC hardware looks like. I really wish some will get inspired and develop new technology or even business.

▲進入本館須持校內證件或登記身分證字號

Please swipe NTU card when entering CCMS-Phys. Building. / non-NTU members are still required to show your R.O.C. ID card and leave personal information on a visitor log book to meet the real-name registration and related anti-COVID-19 guidelines.
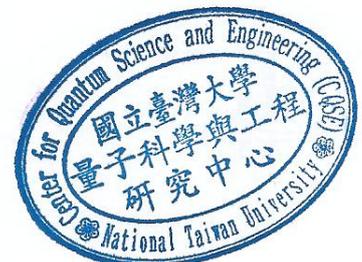
▲無法保持社交距離時 (室內 1.5 公尺) 請戴口罩

Please wearing a mask whenever social distancing (1.5m indoors) is impractical.

▲拒絕有發燒或呼吸道症狀者入場

Individuals with fever or respiratory symptoms are prohibited from participating in the event.

▲場地備有酒精供雙手消毒使用

We provide alcohol sanitizer to keep your hands clean.

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Mr. Eric Kao（高英聰）

◆ The early part of Eric's career is about developing algorithms and managing RD teams. He led the delivery of the best ASIC place & route tool used by most semiconductor fabs across more than 10 years since late 80's. The latest part of his hands-on RD achievement was the delivery of a military grade SSD, which met requirements of no data loss and limited latency in 2010.

◆ Eric's first CEO job was at Xander at 1998. He turned the company profitable, merged three companies and brought it to IPO at 2001. During this period, he led the development of ERP system from scratch.

◆ Eric works for / with start-ups for his entire life so far. He founded or participated in founding stages of many companies, such as TransAsia, Nan Ya Technology, Formosa Sumco Technology, and Socle Technology. His investment is also 100% early stage of more than 30 start-ups, such as Paypal, GRIC Communications, Sandforce, Aruba etc. He played the role of product / Technology due diligence in most of cases.

◆ Eric is a math and physics enthusiast. He got into the field of AI and QC lately. He helped connecting Academia Sinica and FPG, contributed to the founding of Taiwan AI Academy.

◆ Eric recently join the QC hardware team in Academia Sinica.