

Yu-Ting Shen

EXPERIENCE

University of Oklahoma | Graduate Research and Teaching Assistant 2011 - 2018 | Norman, Oklahoma

- 6 semesters teaching assistant for college and graduate level courses.
- Stationed at CERN and dedicated to search for supersymmetric particles since 2015.

Organisation Européenne pour la Recherche Nucléaire (CERN) | Graduate Research Assistant 2015 - 2018 | Geneva, Switzerland

- Participated in E/gamma combine performance group, same-sign 3 leptons + jets analysis group, and Higgsino LSP analysis group. Mainly contributed on electron isolation measurement, real lepton efficiency measurement, and Non-Universal Higgsino Mass model with 2 extra parameters (NUHM2) search.
- Calibrated the electron isolation efficiency by analyzing $Z \rightarrow ee$ events using Tag-and-Probe method. The results became ATLAS recommendations.
- Used C++ and Python to implement Monte Carlo, event selection and reconstruction, background suppression, maximum likelihood, and least Chi square fit to analyze collision data within 95% confidence level.
- Developed a new object-oriented programming framework in C++ increasing the performance and accuracy of the real lepton efficiency measurement. The new framework processes datasets 10 times larger than the previous one, automates analysis procedures reducing a week manual operations to 5 hours, and increases the efficiency to 98%.
- Co-developed and maintained the C++ based Tag-and-probe framework for E/gamma combine performance group.
- Took shifts in the ATLAS control room (ACR) to monitor the ATLAS inner detector operation.

Academia Sinica | Research Assistant 2009 - 2011 | Taipei, Taiwan

- Designed simulation program for the high purity germanium detector using C++ with GEANT4 package.
- Investigated the ambient background radiation and simulated the physics processes when high energy particles interact with the germanium detector.
- Maintained the extra-low temperature (77 K) environment by setting up liquid Nitrogen cooling system at Taiwan Power Company Nuclear Station II.
- Communicated across relevant governmental department and private companies.

Taiwan Semiconductor Manufacturing Company, LTD. (TSMC) | SPICE R&D engineer 2006 - 2009 | Hsinchu, Taiwan

- High-voltage SPICE (Simulation Program with Integrated Circuit Emphasis) model data collection automation, model electrical characteristic parameterization, model accuracy validation, model documentation, and customer support.
- Project leader for 3 projects, and supporter for 4 projects.
- SPICE model specification, production planning and scheduling.
- In charged of the Mix-mode and BCD HV SPICE Model projects with the following process technologies: 0.13 μm , 0.18 μm , 0.20 μm , 0.25 μm , 0.35 μm , 0.5 μm , 0.60 μm .
- Tested the newly installed probe station and programmed to set up the automation reducing 20% of the measurement time.

EDUCATION

University of Oklahoma | Ph.D. in Physics | Cum. GPA: 3.47 / 4.00 2011 - 2018 | Norman, OK

- Advisor: Patrick Skubic
- Dissertation: Search for electroweak production of supersymmetric states in non-universal higgs mass model with two extra parameters compressed scenario with the ATLAS detector
Dissertation link
- Published 4 journal papers and 5 conference notes, 18 internal notes, and presented in 2 conferences.

National Taiwan University | M.S. in Physics | Cum. GPA: 3.86 / 4.00 2003 - 2006 | Taipei, Taiwan

- Advisor: Pao-Ti Chang
- Thesis: Measurements of branching fractions and CP asymmetries in $B \rightarrow \phi\phi K$ decays at Belle
Thesis link
- Graduate student thesis Awards, The Physical Society of Taiwan, 2006.

Chung Yuan Christian University | B.S. in Physics | Cum. GPA: 3.53 / 4.00 1998 - 2002 | Chung Li, Taiwan

- Certificate of Holistic Achievement Award, 1998 - 1999, 1999 - 2000, and 2000 - 2001

- Certificate of Academic Achievement Award, 2000 - 2001

SKILLS

- Languages: C/C++, Python (pandas/numpy/scipy/scikit-learn/matplotlib/seaborn), BASH shell script, R, VBA, \LaTeX , HTML, Markdown
- Framework: ROOT, HistFitter
- Database: SQL
- Tools: Git, SVN, Vim, MicroSoft Office, Apple Pages/Numbers/Keynote
- OS: Mac, Linux, Unix, Windows

LEADERSHIP

President of Taiwanese Student Association (TSA) at the University of Oklahoma

2012 - 2013

- Organized several TSA events in campus and participated in the joint events with the Taiwanese community in Oklahoma.
- Led TSA to win the first place of the Eve of Nations at the University of Oklahoma.