

SHIH-HAO TSENG

169 N Holliston Ave Apt 17
Pasadena, CA 91106
U.S.A.

(607) 280-7864 (Mobile)
shhseng@caltech.edu

EDUCATION

-
- Cornell University (CU)**, Ithaca, NY, U.S.A. Aug. 2013 - Sept. 2018
PhD in Electrical and Computer Engineering (Advisor: Dr. Kevin Tang)
- Relevant Coursework:
Practicum in Operating Systems, Advanced Computer Networking, Approximation Algorithm, Convex Analysis, Functional Analysis, Statistical Inference and Decision, Stochastic Systems: Estimation and Control.
- National Taiwan University (NTU)**, Taipei, Taiwan Sept. 2008 - June 2012
Bachelor of Science in Engineering (minor in Economics)
- GPA: 92.20/100.00; ranking 2nd in a class of 226
 - Relevant Coursework:
Algorithm, Data Structure and Programming, Rf Microwave Wireless Systems, Signals and Systems, Advanced Calculus, Macroeconomics, Microeconomics, Probability and Statistics, Quantum Physics.

RESEARCH INTERESTS

-
- Software-Defined Networking**
- Centralized control, congestion-free routing and high-frequency network updating.
- Communication System**
- Network dynamic model, optimization theory and algorithm.

PUBLICATIONS

-
- N. Wu, **S.-H. Tseng**, and A. Tang,
“Accurate Rate-Aware Flow-Level Traffic Splitting,” in *Proc. Allerton*, 2018.
- S.-H. Tseng** and A. Tang,
“Coflow Deadline Scheduling via Network-Aware Optimization,” in *Proc. Allerton*, 2018.
- S.-H. Tseng**, B. Bai, and J. C. S. Lui,
“Hybrid Circuit/Packet Network Scheduling with Multiple Composite Paths,” in *Proc. IEEE INFOCOM*, 2018.
- S.-H. Tseng** and A. Tang,
“A Local Search Algorithm for the Witsenhausen’s Counterexample,” in *Proc. IEEE CDC*, 2017.
- S.-H. Tseng**, E. Bitar, and A. Tang,
“Random Convex Approximations of Ambiguous Chance Constrained Programs,” in *Proc. IEEE CDC*, 2016.
- A. Gushchin, **S.-H. Tseng**, and A. Tang,
“Optimization-Based Network Flow Deadline Scheduling,” in *Proc. IEEE ICNP*, 2016.
- S.-H. Tseng**, C. L. Lim, N. Wu, and A. Tang,
“Time-Aware Congestion-Free Routing Reconfiguration,” in *Proc. IFIP Networking*, 2016.
- S.-H. Tseng**, A. Tang, G. Choudury, and S. Tse,
“Routing Stability in Hybrid Software-Defined Networks,” submitted for review.

EXPERIENCE

-
- California Institute of Technology**, Pasadena, CA, U.S.A. Oct. 2018 - Present
Postdoctoral Scholar
- Lead layered network control projects.
- Cornell University**, Ithaca, NY, U.S.A. Aug. 2014 - Aug. 2018
Graduate Research Assistant/Teaching Assistant
- Developed a virtual SDN test framework to verify congestion-free updating properties.
 - Simulated optimization-based flow deadline scheduling policies under SDN in NS-3.
 - Helped teach Introduction to Probability and Inference for Random Signals and Systems.
- The Chinese University of Hong Kong**, Shatin, NT, Hong Kong June 2017 - Aug. 2017
Research Assistant
- Developed efficient scheduling algorithms for hybrid packet/circuit networks.
- AT&T**, Middletown, NJ, U.S.A. June 2016 - Aug. 2016
Student Intern - Technical II
- Developed models and designed algorithms for hybrid software-defined networks.

SKILLS

Programming Languages: Proficient in C++, Python and Verilog; working knowledge of ActionScript, C, Basic, HTML, Java, JavaScript, MySQL, and PHP.

Programming Skills: Working knowledge of linux based C++ socket and multithreaded programming.

Simulation Tools: Proficient in PSpice, MATLAB, and NS-3.

Languages: Fluent in English; native in Mandarin Chinese and Taiwanese Hokkien; basic understanding of Cantonese, French, German, Spanish, and Japanese.

HONORS AND AWARDS

Winner of the AT&T SDN Network Design Challenge	2016
--	------

- Awarded to the top team providing the most efficient and cost effective routing method.

Jacobs Fellowship (CU)	2014
-------------------------------	------

Studying Abroad Scholarship (Ministry of Education, Taiwan(R.O.C.))	2013
--	------

Honorary Member of the Phi Tau Phi Scholastic Honor Society	2012
--	------

- Presented to seniors from each college in Taiwan ranking within top 1% of their department.

President's Awards (NTU)	2009, 2010, 2011, 2012
---------------------------------	------------------------

- Four-time recipient; awarded to students ranking within top 5% of their department.

Outstanding Project Award	2011
----------------------------------	------

- Awarded to the top 10 teams of Cross-Strait Finals of 2011 Innovate Asia Competition (FPGA design).

Freshman Chinese Writing Award (NTU)	2009
---	------