

SHIH-HAO TSENG

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EDUCATION

Cornell University (CU) , Ithaca, NY, U.S.A. <i>PhD in Electrical and Computer Engineering (Advisor: Dr. Kevin Tang)</i> <ul style="list-style-type: none">Relevant Coursework: Practicum in Operating Systems, Advanced Computer Networking, Approximation Algorithm, Convex Analysis, Functional Analysis, Statistical Inference and Decision, Stochastic Systems: Estimation and Control.	Aug. 2013 - Present
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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

S.-H. Tseng, A. Tang, G. Choudury, and S. Tse,
"Routing Stability in Hybrid Software-Defined Networks," in *IEEE/ACM Trans. Netw.*, 2019.

J. Cheng, **S.-H. Tseng**, and A. Tang,
"Worst-Case Latency Performance of Load Balancing Through Distributed Waterfilling Algorithm," in *Proc. CISS*, 2019.

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, S. Agarwal, R. Agarwal, H. Ballani, and A. Tang,
"Inter-Datacenter Bulk Transfers with CodedBulk," submitted for review.

S.-H. Tseng,
"A Generic Solver for Unconstrained Control Problems," submitted for review.

S.-H. Tseng,
"Network-Calculus-Based Upper Bounds on Age of Information," in preparation.

EXPERIENCE

California Institute of Technology , Pasadena, CA, U.S.A. <i>Postdoctoral Scholar</i> <ul style="list-style-type: none">Lead layered network control projects.	Oct. 2018 - Present
Cornell University , Ithaca, NY, U.S.A. <i>Graduate Research Assistant/Teaching Assistant</i> <ul style="list-style-type: none">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.	Aug. 2014 - Aug. 2018
The Chinese University of Hong Kong , Shatin, NT, Hong Kong <i>Research Assistant</i> <ul style="list-style-type: none">Developed efficient scheduling algorithms for hybrid packet/circuit networks.	June 2017 - Aug. 2017
AT&T , Middletown, NJ, U.S.A. <i>Student Intern - Technical II</i> <ul style="list-style-type: none">Developed models and designed algorithms for hybrid software-defined networks.	June 2016 - Aug. 2016

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

Jacobs Fellowship (CU)	2014
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Studying Abroad Scholarship (Ministry of Education, Taiwan(R.O.C.))	2013
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Honorary Member of the Phi Tau Phi Scholastic Honor Society	2012
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- Presented to seniors from each college in Taiwan ranking within top 1% of their department.

President's Awards (NTU)	2009, 2010, 2011, 2012
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- Four-time recipient; awarded to students ranking within top 5% of their department.

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

Freshman Chinese Writing Award (NTU)	2009
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