GUOSONG YANG (杨国松)

Department of Electrical and Computer Engineering
University of California
Santa Barbara, CA 93106 U.S.
Tel: +1 (217) 979-8066
Email: guosongyang@ucsb.edu
Homepage: guosong-yang.github.io

POSITION

University of California, Santa Barbara (UCSB)　　　　　　　　Santa Barbara, CA
Postdoctoral Scholar, Department of Electrical and Computer Engineering　　　Aug. 2017–present
Advisor: João P. Hespanha

EDUCATION

University of Illinois at Urbana-Champaign (UIUC)　　　　　　　　Urbana, IL
Ph.D. in Electrical and Computer Engineering　　　　　　　　Aug. 2013–Aug. 2017
Advisor: Daniel Liberzon
Dissertation: "Switched and hybrid systems with inputs: small-gain theorems, control with limited information, and topological entropy"

University of Illinois at Urbana-Champaign (UIUC)　　　　　　　　Urbana, IL
M.S. in Electrical and Computer Engineering　　　　　　　　Aug. 2011–Aug. 2013
Advisor: Daniel Liberzon
Thesis: "A Lyapunov-based small-gain theorem for interconnected switched systems"

Hong Kong University of Science and Technology (HKUST)　　　Kowloon, Hong Kong
B.Eng. in Electronic Engineering (Honors Research Option)　　　　Sep. 2007–May 2011
Minor in Mathematics
Advisor: Zexiang Li

RESEARCH INTERESTS

- Switched and hybrid systems
- Control with limited information
- Nonlinear systems and control theory
- Network security

PUBLICATIONS

Journals:

- **Guosong Yang** and Daniel Liberzon, "Feedback stabilization of a switched linear system with an unknown disturbance under data-rate constraints," *IEEE Transactions on Automatic Control*, vol. 63, no. 7, pp. 2107–2122, 2018

- Kunihisa Okano, Masashi Wakaiki, **Guosong Yang**, and João P. Hespanha, "Stabilization of networked control systems under clock offsets and quantization," *IEEE Transactions on Automatic Control*, vol. 63, no. 6, pp. 1708–1723, 2018

- Andrii Mironchenko, **Guosong Yang**, and Daniel Liberzon, "Lyapunov small-gain theorems for networks of not necessarily ISS hybrid systems," *Automatica*, vol. 88, pp. 10–20, 2018

- **Guosong Yang** and Daniel Liberzon, "A Lyapunov-based small-gain theorem for interconnected switched systems," *Systems & Control Letters*, vol. 78, pp. 47–54, 2015

Conferences:

- **Guosong Yang**, Hossein Hosseini, Dinuka Sahabandu, Andrew Clark, João P. Hespanha, and Radha Poovendran, "Modeling and mitigating the Coremelt attack," in *2018 American Control Conference*, 2018, pp. 3410–3416
- **Guosong Yang**, Daniel Liberzon, and Zhong-Ping Jiang, "Stabilization of interconnected switched control-affine systems via a Lyapunov-based small-gain approach," in *2017 American Control Conference*, 2017, pp. 5182–5187
- **Guosong Yang**, Daniel Liberzon, and Andrii Mironchenko, "Analysis of different Lyapunov function constructions for interconnected hybrid systems," in *55th IEEE Conference on Decision and Control*, 2016, pp. 465–470
- **Guosong Yang** and Daniel Liberzon, "Finite data-rate stabilization of a switched linear system with unknown disturbance," in *10th IFAC Symposium on Nonlinear Control Systems*, vol. 49, no. 18, 2016, pp. 1085–1090
- **Guosong Yang** and Daniel Liberzon, "Stabilizing a switched linear system with disturbance by sampled-data quantized feedback," in *2015 American Control Conference*, 2015, pp. 2193–2198
- **Guosong Yang** and Daniel Liberzon, "Input-to-state stability for switched systems with unstable subsystems: A hybrid Lyapunov construction," in *53rd IEEE Conference on Decision and Control*, 2014, pp. 6240–6245
- Andrii Mironchenko, **Guosong Yang**, and Daniel Liberzon, "Lyapunov small-gain theorems for not necessarily ISS hybrid systems," in *21st International Symposium on Mathematical Theory of Networks and Systems*, 2014, pp. 1001–1008

Grant experience

- Coauthor of "Switched control systems with limited information: an entropy approach to stabilization and disturbance attenuation," funded by National Science Foundation, PI: Daniel Liberzon, 2017–2020

Teaching experience

University of Illinois at Urbana-Champaign	Urbana, IL
– Teaching assistant, ECE517 Nonlinear and Adaptive Control	Fall 2015, Fall 2016
– Teaching assistant, ECE528 Analysis of Nonlinear Systems	Spring 2015

Professional activities

- Journal reviewer for Automatica, System & Control Letters, Nonlinear Analysis: Hybrid Systems, and IEEE Control Systems Letters.
- Conference reviewer for MICNON 2015, HSCC 2017, ACC 2017, and ACC 2018.

Honors and awards

- Graduate College Conference Travel Award, UIUC, 2016
- Best Poster Award, 11th Coordinated Science Laboratory Student Conference, UIUC, 2016

- University Scholarship, HKUST, 2007–2011
- School of Engineering Scholarship, HKUST, 2007–2011
- ECE Outstanding Freshmen Scholarship, HKUST, 2007–2011
- The Joseph Lau Luen Hung Charitable Trust Scholarship, HKUST, 2007–2011
- Dean's List Award, HKUST, Fall 2007–Fall 2009
- Gold medal, 8th Asian Physics Olympiad, 2007

PERSONAL

- Citizenship: China
- Languages: Chinese (native), English (fluent)