Francis Y. Yan

Senior Researcher, Microsoft Research

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EDUCATION

Stanford University   Stanford, CA
Ph.D. in Computer Science   Sept. 2015 – June 2020
  – Dissertation: Practical Machine Learning for Sequential Decision Problems on the Internet
  – Advisors: Keith Winstein, Philip Levis
  – Other committee members: Emma Brunskill, Percy Liang, Bernd Girod

Tsinghua University   Beijing, China
B.S. in Computer Science with Highest Distinction   Aug. 2011 – July 2015
  – Valedictorian of Yao Class (founded by Turing Award laureate Andrew Yao)
  – Rank: 1st/39
B.A. in Economics   Sept. 2012 – July 2015

Massachusetts Institute of Technology   Cambridge, MA
Exchange Student in EECS Department   Feb. – May 2014

EMPLOYMENT

Microsoft Research   Redmond, WA
Senior Researcher in Victor Bahl's group   Aug. 2020 – Present

Microsoft Research   Redmond, WA
Research Intern mentored by Ganesh Ananthanarayanan and Yuanchao Shu   June – Sept. 2019

Google   Mountain View, CA
Software Engineering Intern mentored by Yuchung Cheng   June – Sept. 2016

Baidu   Beijing, China
Research Intern in Big Data Lab   June – Aug. 2015

Microsoft Research Asia   Beijing, China
Research Intern mentored by Yunxin Liu   Mar. – June 2015

The University of Hong Kong   Hong Kong
Research Assistant supervised by Francis C.M. Lau   July – Aug. 2014

TEACHING

Stanford University   Stanford, CA
Course Assistant for *CS140: Operating Systems*   Winter & Spring 2019

Massachusetts Institute of Technology   Cambridge, MA
Grader for *6.207J: Networks*   Spring 2014

PROFESSIONAL ACTIVITIES

Program Committee Member, USENIX NSDI 2023
Networking Area Chair, Journal of Systems Research (2022–2023)
Award Committee Member, IRTF Applied Networking Research Prize 2022
External Reviewer, USENIX NSDI 2022
Editorial Board Member, Journal of Systems Research (2021–2022)
Session Chair and *Challenge Chair*, ACM MMSys 2021
Organizer, Grand Challenge on Banwidth Estimation for Real-Time Communications, ACM MMSys 2021
Reviewer, IEEE/ACM Transactions on Networking (2019–)
Reviewer, ACM SIGCOMM Computer Communication Review (2019)

Awards and Honors

Applied Networking Research Prize, Internet Research Task Force	2021
USENIX NSDI Community Award	2020
USENIX ATC Best Paper Award	2018
Award of Excellence, Stars of Tomorrow Internship Program, Microsoft Research	2015
Outstanding Graduate of Tsinghua University	2015
Outstanding Graduate of Beijing, China	2015
National Scholarship, China	2014
Silver Prize, Yao Award, Tsinghua University	2014
Tsinghua University Comprehensive Scholarship	2013
National Endeavor Fellowship, China	2012
Tsinghua-Baidu Scholarship	2012
Scholarship for Tsinghua Xuetang Talents Program	2011–2014
First Prize, National Senior High School Mathematical Olympiad, China	2010
First Prize, National Olympiad in Informatics in Provinces, China	2008

Publications

[1] Zhengxu Xia*, Yajie Zhou*, <u>Francis Y. Yan</u>, Junchen Jiang (*equal contribution). "Automatic Curriculum Generation for Learning Adaptation in Networking." *To appear at ACM SIGCOMM*, August 2022.

[2] Jeongyoon Eo, Zhixiong Niu, Wenxue Cheng, <u>Francis Y. Yan</u>, Rui Gao, Jorina Kardhashi, Scott Inglis, Michael Revow, Byung-Gon Chun, Peng Cheng, Yongqiang Xiong. "OpenNetLab: Open Platform for RL-based Congestion Control for Real-Time Communications." *To appear at Asia-Pacific Workshop on Networking (APNet)*, July 2022.

[3] Zhiying Xu, <u>Francis Y. Yan</u>, Rachee Singh, Justin T. Chiu, Alexander M. Rush, Minlan Yu. "Teal: Learning-Accelerated Optimization of Traffic Engineering." *In submission.*

[4] Michael Rudow, <u>Francis Y. Yan</u>, Abhishek Kumar, Ganesh Ananthanarayanan, Martin Ellis, K.V. Rashmi. "Tambur: Efficient loss recovery for videoconferencing via streaming codes." *In submission.*

[5] Nikita Lazarev, Tao Ji, Anuj Kalia, Daehyeok Kim, Ilias Marinos, <u>Francis Y. Yan</u>, Christina Delimitrou, Zhiru Zhang, Aditya Akella. "Migrating Baseband Processing in Virtualized RANs with Slingshot." *In submission.*

[6] Emily Marx, <u>Francis Y. Yan</u>, Keith Winstein. "Implementing BOLA-BASIC on Puffer: Lessons for the use of SSIM in ABR logic." *arXiv:2011.09611 (preprint)*, November 2020.

[7] <u>Francis Y. Yan</u>. "Practical Machine learning for Sequential Decision Problems on the Internet." *Ph.D. Dissertation, Stanford University*, June 2020.

[8] <u>Francis Y. Yan</u>, Hudson Ayers, Chenzhi Zhu, Sadjad Fouladi, James Hong, Keyi Zhang, Philip Levis, Keith Winstein. "Learning *in situ*: a randomized experiment in video streaming." *USENIX Symposium on Networked Systems Design and Implementation (NSDI)*, February 2020. **Community Award**. **IRTF Applied Networking Research Prize.**

[9] <u>Francis Y. Yan</u>, Jestin Ma, Greg D. Hill, Deepti Raghavan, Riad S. Wahby, Philip Levis, Keith Winstein. "Pantheon: the training ground for Internet congestion control research." *USENIX Annual Technical Conference (ATC)*, July 2018. **Best Paper Award**.

[10] <u>Francis Y. Yan</u>, Songtao He, Yunxin Liu, Longbo Huang. "Optimizing Power Consumption of Mobile Games." *Power-Aware Computing and Systems (HotPower)*, October 2015.

[11] Dongxiao Yu, Yuexuan Wang, <u>Francis Y. Yan</u>, Jiguo Yu, Francis C.M. Lau. "Speedup of Information Exchange using Multiple Channels in Wireless Ad Hoc Networks." *IEEE International Conference on Computer Communications (INFOCOM)*, April 2015.

[12] <u>Francis Y. Yan</u>, Dongxiao Yu, Yuexuan Wang, Jiguo Yu, Francis C.M. Lau. "Bounded information dissemination in multi-channel wireless networks." *Journal of Combinatorial Optimization*, October 2014.

PATENTS

1. *Media Server Management for Communication Session*, filed with Landon Cox in June 2021.

2. *Data Stream Prioritization for Communication Session*, filed with Landon Cox and Shadi Noghabi in June 2021.

3. *Data Streaming Protocols in Edge Computing*, filed with Ganesh Ananthanarayanan and Yuanchao Shu in June 2021.

4. *Loss Recovery Using Streaming Codes in Forward Error Correction*, filed with Michael Rudow, Ganesh Ananthanarayanan, and Martin Ellis in Sept. 2021.

5. *Wireless Parameter Limits for Predicted vRAN Resource Loads*, filed with Anuj Kalia, Sanjeev Mehrotra, and Victor Bahl in May 2022.

6. *Determining Reference Signal Transmission Times*, filed with Neil Agarwal, Manikanta Kotaru, and Victor Bahl in May 2022.

TALKS

1. "Teal: Traffic Engineering Accelerated with Learning," *Microsoft Research*, Bengaluru, India, May 2022.

2. (Guest Lecture) "Practical Reinforcement Learning on the Internet," *Carnegie Mellon University*, Pittsburgh, PA, Mar. 2022.

3. (Guest Lecture) "Learning *in situ*: a randomized experiment in video streaming," *Columbia University*, New York, NY, Oct. 2021.

4. (Panel) "Grand Challenge on Bandwidth Estimation for Real-Time Communications," *Microsoft Research Summit*, Beijing, China, Oct. 2021.

5. "Networking Meets Cloud and Edge Applications," *Microsoft Research Summit*, Redmond, WA, Oct. 2021.

6. (Opening) "Grand Challenge on Bandwidth Estimation for Real-Time Communications," *ACM MMSys*, Istanbul, Turkey, Sept. 2021.

7. "Learning *in situ*: a randomized experiment in video streaming," *IETF 110*, Mar. 2021.

8. "Practical Machine Learning for Sequential Decision Problems on the Internet," *University of California, Irvine*, Irvine, CA, Feb. 2021.

9. "Practical Machine Learning for Sequential Decision Problems on the Internet," *Microsoft Research*, Redmond, WA, Sept. 2020.

10. "Practical Machine Learning for Sequential Decision Problems on the Internet," *Princeton University*, Princeon, NJ, Sept. 2020.

11. "Practical Machine Learning for Sequential Decision Problems on the Internet," *Shandong University*, Qingdao, China, June 2020.