Yunming Xiao

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RESEARCH INTEREST

I am broadly interested in computer networks and distributed systems. My current work focuses on network measurement and edge network design.

EDUCATION

Ph.D. Candidate, Computer Science — Sep 2019 - *Present*
Northwestern University, Evanston, IL
Advisor: *Prof. Aleksandar Kuzmanovic*

B.Eng., Computer Science — Sep 2015 - Jun 2019
Beijing University of Posts and Telecommunications, Beijing, China
GPA: 3.7/4.0 (87/100), Graduated With Honors

RESEARCH AND WORK EXPERIENCE

Northwestern University, USA — Sep 2019 - *Present*
Research Assistant, Advisor: *Prof. Aleksandar Kuzmanovic*

- *Snatch: Streaming Analytics at the Network Edge*
  - Proposed and developed Snatch, a system that accelerates the online streaming analytics by breaking the current arrangement and leveraging semantic cookies and in-network computation
- *Monetizing Spare Bandwidth: the Case of Distributed VPNs*
  - Performed the first systematic measurement study of the decentralized VPNs ecosystem focusing on the major players shedding lights on the performance, privacy and security issues
  - Developed a convenient DVPN manager system (RING) which provides security and privacy guarantees, as well as automatic bandwidth and price control which optimize the income of DVPN node providers
- *Decoding the Kodi Ecosystem*
  - Worked on De-Kodi, a system capable of crawling large cross-sections of Kodi's decentralized ecosystem
  - Developed SafeKodi system which leverages the help of Kodi users to explore the Kodi ecosystem in the wild and, in return, offers information about potentially malicious add-ons to Kodi users.
  - SafeKodi has received multiple media coverage and is used by over 20k distinct users

Teaching Assistant:

- COMP_SCI 110: Intro to Computer Programming – Fall 2020
- COMP_SCI 340: Intro to Computer Networking – Winter 2022

Hewlett Packard Labs, USA — May - Aug 2022
Research Associate Intern (Networking and Distributed Systems Lab), Advisor: *Dr. Puneet Sharma*

Nokia Bell Labs, USA — Jun - Aug 2021
Networking Bell Labs Summer Intern, Advisor: *Dr. Matteo Varvello, Dr. T.V. Lakshman*

- *FIAT: Frictionless Authentication of IoT Traffic*
  - Built FIAT, a third-party system that frictionlessly authorizes IoT traffic by learning recurring traffic and validating human actions behind less predictable traffic

Bytedance, China — Mar - Jul 2019
Infrastructure R&D Intern

Tsinghua University, China — Mar 2018 - Mar 2019
Research Assistant, Advisor: *Prof. Wenfei Wu*

King Abudullah University of Science and Technology, KSA Jul - Oct 2018
Visiting Student, Advisor: *Prof. Marco Canini*

PUBLICATIONS

Conference Publications

- [3] **Yunming Xiao**, Matteo Varvello, Aleksandar Kuzmanovic:
  Monetizing Spare Bandwidth: the Case of Distributed VPNs.
  To appear in *SIGMETRICS'22*.

- [2] Marc Anthony Warrior, **Yunming Xiao**, Matteo Varvello, Aleksandar Kuzmanovic:
  De-Kodi: Understanding the Kodi Ecosystem.
  In Proceedings of The Web Conference 2020 *(WWW'20)*, pp. 1171-1181.

- [1] **Yunming Xiao**, Haifeng Sun, Zirui Zhuang, Jingyu Wang, Qi Qi:
  Common Knowledge Based Transfer Learning For Traffic Classification.
  IEEE 43rd Conference on Local Computer Networks *(LCN'18)*, pp. 311-314.

Journal Publications

- [1] **Yunming Xiao**, Bin Wu:
  Close spatial arrangement of mutants favors and disfavors fixation.
  PLoS Computational Biology 15(9): e1007212. 2019. / arXiv: 1811.08718.

Refereed Posters

- [2] **Yunming Xiao**, Matteo Varvello:
  FIAT: Frictionless Authentication of IoT Traffic.
  In Proceedings of *CoNEXT'21*.

- [1] **Yunming Xiao**, Matteo Varvello, Aleksandar Kuzmanovic:
  A First Look Into Distributed VPNs.
  In the 21st ACM Internet Measurement Conference *(IMC'21)*.

Un-refereed & Working Papers

- [4] **Yunming Xiao**, Yibo Zhao, Sen Lin, Aleksandar Kuzmanovic:
  Snatch: Streaming Analytics at the Network Edge.
  On Submission.

- [3] **Yunming Xiao**, Matteo Varvello:
  FIAT: Frictionless Authentication of IoT Traffic.
  On Submission.

- [2] **Yunming Xiao**, Matteo Varvello, Marc Anthony Warrior, Aleksandar Kuzmanovic:
  Decoding the Kodi Ecosystem.
  On Submission.

- [1] Aritra Dutta, El Houcine Bergou, **Yunming Xiao**, Marco Canini, Peter Richtárik:
  Direct Nonlinear Acceleration.
  arXiv: 1905.11692.

SERVICES

Reviewer, Computer Communication Review (CCR)
Reviewer, IEEE Journal on Selected Areas in Communications (JSAC)
Reviewer, Journal of Systems Architecture (JSA)