



UNIVERSITY OF  
CALGARY

# Network Traffic Measurement Research at the U of Calgary

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Department of Computer Science

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- Faculty Members (4):
  - Majid Ghaderi, Zongpeng Li, Mea Wang, Carey Williamson
- Adjunct Faculty (1):
  - Martin Arlitt (HP Labs)
- PhD Students (9):
  - Ali Abbasi, Maryam Elahi, Cyriac James, Mehrnaz Mireslami, Seyed Md. Pakdaman, Ali Sehati, Reza Zakerinesab, Linqun Zhang, Ruiting Zhou
- MSc Students (15):
  - Mohamad Darianian, Wei Fang, Danny Fisher, Sijua Gu, Mackenzie Haffey, Yuhui Lin, Md. Seyed Naghibi, Mahshid Navabi, Keynan Pratt, Sourish Roy, Abolfazl Samani, Maryam Soleimani, Akshita Tyagi, Shunyi Xu, Yao Zhao

- Research area?
  - Computer networks, wireless networks, Internet protocols, computer systems performance evaluation
- Mission: “Make the Internet go faster”
- Approach?
  - Experimental, simulation, analytical
- Key challenges?
  - Citius, Altius, Fortius!
  - Performance, scalability, robustness



- Maryam Elahi (PhD, Dec 2016 – expected)
  - Fairness and efficiency in speed scaling designs
- Mohamad Darianian (MSc, in progress)
  - Experimental evaluation of SAVI OpenFlow controllers
- Mackenzie Haffey (MSc, in progress)
  - Network security analysis tools for enterprise scale
- Keynan Pratt (MSc, Dec 2016 – expected)
  - Distributed caching for Friend-to-Friend (F2F) networks
- Sourish Roy (MSc, in progress)
  - Characterization of Desire-to-Learn (D2L) LMS traffic

- Martin Arlitt (adjunct faculty)
  - Monthly network [security](#) traffic analysis for UCIT
- Michel Laterman (MSc, Sept 2015)
  - Workload characterization of [Netflix](#) and [Twitch](#)
- Yang Liu (MSc, Aug 2015)
  - Characterizing scientific Web sites ([ASTRO](#) + [Aurora](#))
- Feifei Shi (BSc, June 2016)
  - Redundant traffic elimination (RTE) on email traffic
- Arsham Skrenes (MSc, Aug 2016)
  - Fine-grain energy measurements of Intel i7 processor
- Zhengping Zhang (BSc, June 2016)
  - Characterization of [Office 365](#) email traffic

- The U of C has a large and active Networks Research Group, some of whom (me!) do very applied network performance research
- Internet traffic continues to grow and evolve in many varied and interesting ways with each new generation of applications (and users!)
- Video streaming is the current bandwidth hog
- Network security issues are quite pervasive
- HTTPS will limit visibility in future studies



- Thank you!
- Questions?
- For more info: [carey@cpsc.ucalgary.ca](mailto:carey@cpsc.ucalgary.ca)