Arian Akhavan Niaki

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Research Interests

- Computer Networks, Network Measurement, Internet Measurement

Education

University of Massachusetts Amherst, 2017-2022
MS/PhD student in Computer Science, GPA: (**3.9/4**)
Advisor: Dr. Phillipa Gill

Stony Brook University, 2016-2017
MS/PhD student in Computer Science (Transferred to UMass), GPA: (**3.9/4**)

Sharif University of Technology, 2011-2016
B.S. in Computer Engineering

Microsoft Certified IT Professional, Shatel Academy, 2014
Studied the course on Windows Server 2008 R2

Professional Experience

Cloudflare Summer 2021
- Research Intern
- Worked on deploying a traffic tampering measurement project

ThousandEyes (Cisco) Summer 2020
- Internet Researcher Intern
- Worked on analyzing and comparing CDN performance globally

International Computer Science Institute (ICSI) Summer 2018
- Supervised by Dr. Nicholas Weaver
- Worked on Estimating IoT population using DNS caches

Institute for Studies in Theoretical Physics and Mathematics (IPM)
- Supervised by Dr. Reza Entezari Maleki and Prof. Ali Movaghar
- Worked on Performance Modeling and Evaluation of Web Services Using High Level Extensions of Petri Nets, Summer 2015-2016
  As my B.S. Thesis, A joint work with Ms. Negar Ghorbani

Pishtazan Andishe Pouya, Tehran, Iran Jan 2016 - July 2016
- Produced, designed and analyzed models for software information systems and web applications.

VADA Future Communications, Tehran, Iran 2014
- Developed several Android mobile applications
- Designed, developed, and maintained Django/Semantic-UI web applications
- Designed, developed a web crawler with Scrapy Spider

Teaching Assistant,
- University of Massachusetts, Amherst
  - COMPSCI 453: Computer Networking Spring 2021
  - COMPSCI 660: Advanced Information Assurance Fall 2020
  - COMPSCI 460: Intro to Computer and Network Security Fall 2019
- Stony Brook University

– CSE 305: Principles of Database Systems Spring 2017
– CSE 219: Computer Science III Fall 2016

Publications

Conference Papers

- How Great is the Great Firewall? Measuring China's DNS Censorship
  Nguyen Phong Hoang, Arian Akhavan Niaki, Jakub Dalek, Jeffrey Knockel, Pellaeon Li, Bill Marczak, Masashi Crete-Nishihata, Phillipa Gill and Michalis Polychronakis
  in Proceedings of the 30th USENIX Security Symposium Aug. 2021
- Domain Name Encryption Is Not Enough: Privacy Leakage via IP-based Website Fingerprinting
  Nguyen Phong Hoang, Arian Akhavan Niaki, Nikita Borisov, Phillipa Gill and Michalis Polychronakis
  In Proceedings of ACMthe 21st Privacy Enhancing Technologies Symposium. PoPETs 21. Jul. 2021
- Cache me Outside: A New Look at DNS Cache Probing
  Arian Akhavan Niaki, William Marczak, Sahand Farhoodi, Andrew McGregor, Phillipa Gill and Nicholas Weaver
  In Proceedings of the 22nd Passive and Active Measurement Conference (PAM 2021). Mar. 2021
- Triplet Censors: Demystifying Great Firewalls DNS Censorship Behavior
  Anonymous, Arian Akhavan Niaki, Nguyen Phong Hoang, Phillipa Gill and Amir Houmansadr
  In Proceedings of the 10th USENIX Workshop on Free and Open Communications on the Internet. FOCI 20. USENIX. 2020. Aug. 2020
- Assessing the Privacy Benefits of Domain Name Encryption
  Nguyen Phong Hoang, Arian Akhavan Niaki, Nikita Borisov, Phillipa Gill and Michalis Polychronakis
  In Proceedings of ACM ASIACCS 2020. July. 2020
- The web is still small after more than a decade
  Nguyen Phong Hoang, Arian Akhavan Niaki, Michalis Polychronakis and Phillipa Gill
  In ACM SIGCOMM Computer Communication Review 2020. June. 2020
- A Global, Longitudinal Internet Censorship Measurement Platform
  Arian Akhavan Niaki, Shinyoung Cho, Zachary Weinberg, Nguyen Phong Hoang, Abbas Razaghpanah, Nicolas Christin, and Phillipa Gill
  Proceedings of the 41st IEEE Symposium on Security and Privacy (Oakland). IEEE. 2020. May. 2020
- A Large-Scale Analysis of Deployed Traffic Differentiation Practices
  Fangfan Li, Arian Akhavan Niaki, David Choffnes, Phillipa Gill, and Alan Mislove
  In Proceedings of ACM SIGCOMM 2019. Aug. 2019
- Studying TLS Usage in Android Apps
  Abbas Razaghpanah, Arian Akhavan Niaki, Narseo Vallina-Rodriguez, Srikanth Sundaresan, Johanna Amann, and Phillipa Gill
  Conference on emerging Networking EXperiments and Technologies (CoNEXT). Seoul/Incheon, South Korea. Dec. 2017
- liberate (n): A library for exposing (traffic-classification) rules and avoiding them efficiently
  Fangfan Li, Abbas Razaghpanah, Arash Molavi Kakhki, Arian Akhavan Niaki, David Choffnes, Phillipa Gill, and Alan Mislove
  Internet Measurement Conference (IMC). London, UK. Nov. 2017

Journal Papers

- Modeling and Evaluation of Service Composition in Commercial Multi-Clouds using Timed Colored Petri Nets
  R. Entezari-Maleki, S.E. Etesami, N. Ghorbani, A.A. Niaki, L. Sousa, and A. Movaghar,
  IEEE Transactions on Systems, Man, and Cybernetics: Systems (Volume: PP, Issue: 99) Nov. 2017

Projects

Information Controls Lab (ICLab): I took part in a global Internet censorship measurement platform.

- Curated a database of analyzed data about Internet censorship.
- Used robust censorship detection techniques with low false positive rates.

Movie genre classification using movie posters and storylines: We proposed a deep neural network that leverages both the movie poster and storyline to predict it's movie genre.

- Curated a database of movie posters and storylines from IMDb.
- Compared the performance of our proposed network to the cases of networks only using movie posters and only storylines.

A TLS Measurement on Universities Around The US: We measured several factors about HTTPS servers, including TLS/SSL version, cipher suites, and certificates.

- Indexed data using Elasticsearch and written in Python which ended up as being one of the best course projects. Project available at: Link

Enterprise Resource Planning System: Analyzed, designed and implemented a desktop based Enterprise Resource Planning system.

- Developed a maintainable, fully documented Object Oriented Software written in Java using The RUP methodology and proper UML diagrams. Class's second best project. Project available at: Link

Hotel Reservation System: Designed and Implemented a web based Hotel Reservation System.

- Used the MVC architecture and relational databases and a combination of Python-Django, HTML, and JavaScript. The class's best project overall. Project available at: Link

Skills

- Programming Languages: Python, Java, Matlab, C/C++(basic), Android Programming, SQL, Swift(basic), bro, Golang(basic)
- Web Development: HTML, CSS, JavaScript(JQuery), Python(Django)
- Operating Systems: Linux(Ubuntu), Windows, Macintosh, Windows Server
- Typesetting Tools: Microsoft Office, LaTeX, Google Docs
- Network Tools: Wireshark, Cisco Packet Tracer, Microsoft Exchange Server

Activities

- Iranian Graduate Student Association at UMass 2017-2018
  Vice president - Event Coordinator