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Research Interests:

Computer networks and systems, programmable networks, learning-based systems, data analytics for internet-of-things

Education

UNSW Sydney

PhD, Electrical Engineering and Telecommunications,

Thesis: Broadband Fast-Lanes and Slow-Lanes Empowered by Software Defined Networking,

Supervisor: Prof. Vijay Sivaraman

Sydney, Australia

Feb 2012–Dec 2015

Sharif University of Technology

M.Sc., Electrical Engineering,

Thesis: Automatic Vision-Based Wayside System for Train Component Monitoring

Supervisor: A/Prof. Kambiz Nayeibi

Tehran, Iran

Sep 2001–Jan 2004

Sharif University of Technology

B.Sc., Electrical Engineering,

Thesis: Short Term Load Forecasting Using Artificial Neural Networks and Fuzzy Expert System

Supervisor: Prof. Ali Mohammad Ranjbar

Tehran, Iran

Sep 1997–Jun 2001

Employment

UNSW Sydney

Senior Lecturer in Telecommunications,

Sydney, Australia

Jul 2020–present

UNSW Sydney

Lecturer in Telecommunications,

Sydney, Australia

Jan 2019–Jun 2020

UNSW Sydney

Postdoctoral Research Fellow in Telecommunications,

Sydney, Australia

Jan 2016–Dec 2018

AZAD University

Lecturer in Electronics Engineering & Telecommunications,

Saveh, Iran

Sep 2004–Feb 2012

Broadband ISP

Senior Telecom Engineer,

Tehran, Iran

Feb 2004–Feb 2012

Publications

Books and Book Chapters:

1. **Hassan Habibi Gharakheili**, Ayyoob Hamza and Vijay Sivaraman, "Cyber-Securing IoT Infrastructure by Modeling Network Traffic", chapter in the book "*Security and Privacy in the Internet of Things: Architectures, Techniques, and Applications*", John Wiley & Sons, 2021. ISBN: 978-1-119-60774-8 (Print) 978-1-119-60775-5 (Online). DOI: 10.1002/9781119607755.ch6.
2. **Hassan Habibi Gharakheili**, "The Role of SDN in Broadband Networks", *Springer Theses*, Singapore, 2017. ISBN: 978-981-10-3478-7 (Print) 978-981-10-3479-4 (Online).

Journal Publications:

3. Arman Pashamokhtari, Gustavo Batista and **Hassan Habibi Gharakheili**, "Efficient IoT Traffic Inference: from Multi-View Classification to Progressive Monitoring", *ACM Transactions on Internet of Things (TIOT)*, 5(1):Article 5(1-30), Dec 2023.
4. Minzhao Lyu, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "PEDDA: Practical and Effective Detection of Distributed Attacks on Enterprise Networks via Progressive Multi-Stage Inference", *Computer Networks (Elsevier)*, 233:109873, Jun 2023.
5. Arman Pashamokhtari, Norihiro Okui, Masataka Nakahara, Ayumu Kubota, Gustavo Batista and **Hassan Habibi Gharakheili**, "Dynamic Inference from IoT Traffic Flows under Concept Drifts in Residential ISP Networks", *IEEE Internet of Things Journal (IoT-J)*, 10(17):15761-15773, Apr 2023.
6. Minzhao Lyu, **Hassan Habibi Gharakheili**, Craig Russell and Vijay Sivaraman, "Enterprise DNS Asset Mapping and Cyber-Health Tracking via Passive Traffic Analysis", *IEEE Transactions on Network and Service Management (TNSM)*, 20(3):3699-3716, Nov 2022.
7. Arman Pashamokhtari, Norihiro Okui, Yutaka Miyake, Masataka Nakahara and **Hassan Habibi Gharakheili**, "Combining Stochastic and Deterministic Modeling of IPFIX Records to Infer Connected IoT Devices in Residential ISP Networks", *IEEE Internet of Things Journal (IoT-J)*, 10(6):5128-5145, Nov 2022.
8. Minzhao Lyu, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Classifying and Tracking Enterprise Assets via Dual-Grained Network Behavioral Analysis", *Computer Networks (Elsevier)*, 218:109387, Dec 2022.
9. Minzhao Lyu, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "A Survey on DNS Encryption: Current Development, Malware Misuse, and Inference Techniques", *ACM Computing Surveys*, 55(8):1-28, Dec 2022.
10. Ayyoob Hamza, **Hassan Habibi Gharakheili**, Trevor Pering and Vijay Sivaraman, "Combining Device Behavioral Models and Building Schema for Cyber-Security of Large-Scale IoT Infrastructure", *IEEE Internet of Things Journal (IoT-J)*, 9(23):24174-24185, Dec 2022.
11. Arman Pashamokhtari, Gustavo Batista and **Hassan Habibi Gharakheili**, "AdIoTack: Quantifying and Refining Resilience of Decision Tree Ensemble Inference Models against Adversarial Volumetric Attacks on IoT Networks", *Computers & Security (Elsevier)*, 120:102801, Sep 2022.
12. Jawad Ahmed, **Hassan Habibi Gharakheili**, Craig Russell and Vijay Sivaraman, "Automatic Detection of DGA-Enabled Malware Using SDN and Traffic Behavioral Modeling", *IEEE Transactions on Network Science and Engineering (TNSE)*, 9(4):2922-2939, July-Aug 2022.
13. Iresha Mohottige, **Hassan Habibi Gharakheili**, Tim Moors and Vijay Sivaraman, "Modeling Classroom Occupancy using Data of WiFi Infrastructure in a University Campus", *IEEE Sensors Journal*, 22(10):9981-9996, May 2022.

14. Tara Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Estimating Passenger Queue for Bus Resource Optimization using LoRaWAN-enabled Ultrasonic Sensors", *IEEE Systems Journal (ISJ)*, 16(4):6265-6276, Mar 2022.
15. Iresha Mohottige, **Hassan Habibi Gharakheili**, Arun Vishwanath, Salil Kanhere and Vijay Sivaraman, "Understanding and Reducing HVAC Power Consumption Post Evacuation Events in Commercial Buildings", *IEEE Internet of Things Journal (IoT-J)*, 9(18):17235-17248, Feb 2022.
16. Mohammad Hossein Chinaei, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Optimal Witnessing of Healthcare IoT Data Using Blockchain Logging Contract", *IEEE Internet of Things Journal (IoT-J)*, 8(12):10117-10130, Jun 2021.
17. Minzhao Lyu, **Hassan Habibi Gharakheili**, Craig Russell and Vijay Sivaraman, "Hierarchical Anomaly-Based Detection of Distributed DNS Attacks on Enterprise Networks", *IEEE Transactions on Network and Service Management (TNSM)*, 18(1):1031-1048, Mar 2021.
18. Tara Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Monetizing Parking IoT Data via Demand Prediction and Optimal Space Sharing", *IEEE Internet of Things Journal (IoT-J)*, 9(8):5629-5644, Dec 2020.
19. Ayyoob Hamza, Dinesha Ranathunga, **Hassan Habibi Gharakheili**, Theophilus A. Benson, Matthew Roughan and Vijay Sivaraman, "Verifying and Monitoring IoTs Network Behavior using MUD Profiles", *IEEE Transactions on Dependable and Secure Computing (TDSC)*, 19(1):1-18, Jan 2022.
20. Arunan Sivanathan, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Detecting Behavioral Change of IoT Devices using Clustering-Based Network Traffic Modeling", *IEEE Internet of Things Journal (IoT-J)*, 7(8):7295-7309, Aug 2020.
21. Arunan Sivanathan, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Managing IoT Cyber-Security using Programmable Telemetry and Machine Learning", *IEEE Transactions on Network and Service Management (TNSM)*, 17(1):60-74, Mar 2020.
22. Jawad Ahmed, **Hassan Habibi Gharakheili**, Qasim Raza, Craig Russell and Vijay Sivaraman, "Monitoring Enterprise DNS Queries for Detecting Data Exfiltration from Internal Hosts", *IEEE Transactions on Network and Service Management (TNSM)*, 17(1):265-279, Mar 2020.
23. Himel Kumar, **Hassan Habibi Gharakheili**, Craig Russell and Vijay Sivaraman, "Enhancing Security Management at Software-Defined Exchange Points", *IEEE Transactions on Network and Service Management (TNSM)*, 16(4):1479-1492, Dec 2019.
24. **Hassan Habibi Gharakheili**, Arunan Sivanathan, Ayyoob Hamza and Vijay Sivaraman, "Network-Level Security for the Internet of Things: Opportunities and Challenges", *IEEE Computer*, 52(8):58-62, Aug 2019.
25. **Hassan Habibi Gharakheili**, Minzhao Lyu, Yu Wang, Himel Kumar and Vijay Sivaraman, "iTeleScope: Softwarized Network Middle-Box for Real-Time Video Telemetry and Classification", *IEEE Transactions on Network and Service Management (TNSM)*, 16(3):1071-1085, Sep 2019.
26. Tara Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Experiences with IoT and AI in a Smart Campus for Optimizing Classroom Usage", *IEEE Internet of Things Journal (IoT-J)*, 6(5):7595-7607, Oct 2019.
27. Arunan Sivanathan, **Hassan Habibi Gharakheili**, Franco Loi, Adam Radford, Chamith Wijenayake, Arun Vishwanath and Vijay Sivaraman, "Classifying IoT Devices in Smart Environments Using Network Traffic Characteristics", *IEEE Transactions on Mobile Computing (TMC)*, 18(8):1745-1759, Aug 2019.
28. Vijay Sivaraman, **Hassan Habibi Gharakheili**, Clinton Fernandes, Narelle Clark and Tanya Karliychuk, "Security and Privacy Implications of Smart IoT Devices in the Home", *IEEE Technology and Society Magazine*, 37(2):71-79, Jun 2018.

29. Aous Thabit Naman, Yu Wang, **Hassan Habibi Gharakheili**, Vijay Sivaraman and David Taubman, "Responsive High Throughput Congestion Control for Interactive Applications over SDN-Enabled Networks", *Computer Networks (Elsevier)*, 134(7):152-166, Apr 2018.
30. **Hassan Habibi Gharakheili**, Vijay Sivaraman, Tim Moors, Arun Vishwanath, John Matthews and Craig Russell, "Enabling Fast and Slow Lanes for Content Providers Using Software Defined Networking", *IEEE/ACM Transactions on Networking (ToN)*, 25(3):1373-1385, Jun 2017.
31. **Hassan Habibi Gharakheili**, Vijay Sivaraman, Arun Vishwanath, Luke Exton, John Matthews and Craig Russell, "SDN APIs and Models for Two-Sided Resource Management in Broadband Access Networks", *IEEE Transactions on Network and Service Management (TNSM)*, 13(4):823-834, Dec 2016.
32. **Hassan Habibi Gharakheili**, Arun Vishwanath and Vijay Sivaraman, "An Economic Model for a New Broadband Ecosystem Based on Fast and Slow Lanes", *IEEE Network Magazine*, 30(2):26-31, Mar-Apr 2016.
33. **Hassan Habibi Gharakheili**, Arun Vishwanath and Vijay Sivaraman, "Perspectives on Net Neutrality and Internet Fast-Lanes", *ACM Computer Communications Review (CCR)*, 46(1):64-69, Jan 2016.
34. **Hassan Habibi Gharakheili**, Arun Vishwanath and Vijay Sivaraman, "Comparing Edge and Host Traffic Pacing in Small Buffer Networks", *Computer Networks (Elsevier)*, 77:103-116, Feb 2015.

Conference Papers:

35. Savindu Wannigama, Arunan Sivanathan, Ayyoob Hamza and **Hassan Habibi Gharakheili**, "Unveiling Behavioral Transparency of Protocols Communicated by IoT Networked Assets", *IEEE WoWMoM workshop on Smart Computing for Smart Cities (SC2)*, Perth, Australia, Jun 2024.
36. Song Guo, Minzhao Lyu and **Hassan Habibi Gharakheili**, "Realizing Open and Decentralized Marketplace for Exchanging Data of Expected IoT Behaviors", *IEEE/IFIP NOMS*, Seoul, Korea, May 2024.
37. Jiawang Zeng, Deepak Mishra, **Hassan Habibi Gharakheili** and Aruna Seneviratne, "Secure Energy Efficiency Fairness Maximisation in Backscatter Throughput Constrained UAV-Assisted Data Collection", *IEEE ICASSP*, Seoul, Korea, Apr 2024.
38. Yijia Zhang, Deepak Mishra, **Hassan Habibi Gharakheili** and Derrick Wing Kwan Ng, "UAV Operation Time Minimization for Wireless-Powered Data Collection", *IEEE ICASSP*, Seoul, Korea, Apr 2024.
39. Aleksandar Pasquini, Rajesh Vasa, **Hassan Habibi Gharakheili**, Irini Logothetis, Minh Tran and Alexander Chambers, "Exploring the Reliability of IoT Packet Classifiers: An Experimental Study", *IEEE Globecom workshop on AI/ML for Edge/Fog Networks (A4E)*, Kuala Lumpur, Malaysia, Dec 2023.
40. Hugo Sullivan, Arunan Sivanathan, Ayyob Hamza and **Hassan Habibi Gharakheili**, "Programmable Active Scans Controlled by Passive Traffic Inference for IoT Asset Characterization", *IEEE/IFIP NOMS workshop on Internet of Things Management (Manage-IoT)*, Miami, FL, USA, May 2023.
41. Jawad Ahmed, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Learning-Based Detection of Malicious Hosts by Analyzing Non-Existent DNS Responses", *IEEE Globecom*, Rio de Janeiro, Brazil, Dec 2022.
42. Daravichet Tin, Maryam Shahpasand, **Hassan Habibi Gharakheili** and Gustavo Batista, "Classifying Time-Series of IoT Flow Activity using Deep Learning and Intransitive Features", *IEEE SKIMA*, Phnom Penh, Cambodia, Dec 2022.
43. Arman Pashamokhtari, Arunan Sivanathan, Ayyoob Hamza and **Hassan Habibi Gharakheili**, "PicP-MUD: Profiling Information Content of Payloads in MUD Flows for IoT Devices", *IEEE WoWMoM workshop on Smart Computing for Smart Cities (SC2)*, Belfast, United Kingdom, Jun 2022.
44. Sharat Madanapalli, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Know Thy Lag: In-Network Game Detection and Latency Measurement", *PAM*, Virtual Conference, Mar 2022.

45. Jay Anand, Arunan Sivanathan, Ayyoob Hamza and **Hassan Habibi Gharakheili**, "PARVP: Passively Assessing Risk of Vulnerable Passwords for HTTP Authentication in Networked Cameras", *ACM CoNEXT workshop on Descriptive Approaches to IoT Security, Network, and Application Configuration (DAI-SNAC)*, Virtual Conference, Dec 2021.
46. Arman Pashamokhtari, Norihiro Okui, Yutaka Miyake, Masataka Nakahara and **Hassan Habibi Gharakheili**, "Inferring Connected IoT Devices from IPFIX Records in Residential ISP Networks", *IEEE LCN*, Virtual Conference, Oct 2021.
47. Sharat Madanapalli, Alex Mathai, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "ReCLive: Real-Time Classification and QoE Inference of Live Video Streaming Services", *IEEE/ACM IWQoS*, Virtual Conference, Jun 2021.
48. Arman Pashamokhtari, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Progressive Monitoring of IoT Networks Using SDN and Cost-Effective Traffic Signatures", *ACM ETSecIoT*, Sydney, Australia, Apr 2020.
49. Iresha Mohottige, **Hassan Habibi Gharakheili**, Arun Vishwanath, Salil Kanhere and Vijay Sivaraman, "Evaluating Emergency Evacuation Events Using Building WiFi Data", *ACM/IEEE IoTDI*, Sydney, Australia, Apr 2020.
50. Sharat Madanapalli, Arunan Sivanathan, **Hassan Habibi Gharakheili**, Vijay Sivaraman, Santosh Patil and Byju Pularikkal, "Modeling and Monitoring Wi-Fi Calling Traffic in Enterprise Networks Using Machine Learning", *IEEE LCN*, Osnabruck, Germany, Oct 2019.
51. Arunan Sivanathan, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Inferring IoT Device Types from Network Behavior Using Unsupervised Clustering", *IEEE LCN*, Osnabruck, Germany, Oct 2019.
52. Sharat Madanapalli, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Assisting Delay and Bandwidth Sensitive Applications in a Self-Driving Network", *ACM Sigcomm workshop on Network Meets AI & ML (NetAI)*, Beijing, China, Aug 2019.
53. Sharat Madanapalli, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Inferring Netflix User Experience from Broadband Network Measurement", *IEEE/IFIP TMA*, Paris, France, Jun 2019.
54. Tara Sutjarittham, Gary Chen, **Hassan Habibi Gharakheili**, Vijay Sivaraman and Salil Kanhere, "Measuring and Modeling Car Park Usage: Lessons Learned from a Campus Field-Trial", *IEEE WoWMoM*, Washington DC, USA, Jun 2019.
55. Ayyoob Hamza, **Hassan Habibi Gharakheili**, Theo Benson and Vijay Sivaraman, "Detecting Volumetric Attacks on IoT Devices via SDN-Based Monitoring of MUD Activity", *ACM SOSR*, San Jose, California, USA, Apr 2019.
56. Vijay Sivaraman, Sharat Madanapalli, Himal Kumar and **Hassan Habibi Gharakheili**, "OpenTD: Open Traffic Differentiation in a Post-Neutral World", *ACM SOSR*, San Jose, California, USA, Apr 2019.
57. Minzhao Lyu, **Hassan Habibi Gharakheili**, Craig Russell and Vijay Sivaraman, "Mapping an Enterprise Network by Analyzing DNS Traffic", *Passive and Active Measurement (PAM)*, Puerto Varas, Chile, Mar 2019.
58. Jawad Ahmed, **Hassan Habibi Gharakheili**, Qasim Raza, Craig Russell and Vijay Sivaraman, "Real-Time Detection of DNS Exfiltration and Tunneling from Enterprise Networks", *IFIP/IEEE IM*, Washington DC, USA, Apr 2019.
59. Arunan Sivanathan, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Can We Classify an IoT Device Using TCP Port Scan?", *IEEE ICIAfS*, Colombo, Sri Lanka, Dec 2018.
60. Iresha Mohottige, Thanchanok Sutjarittham, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Role of Campus WiFi Infrastructure for Occupancy Monitoring in a Large University", *IEEE ICIAfS*, Colombo, Sri Lanka, Dec 2018.

61. Thanchanok Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Realizing a Smart University Campus: Vision, Architecture, and Implementation", *IEEE ANTS*, Radisson Blu, Indore, India, Dec 2018.
62. Ayyoob Hamza, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Combining MUD Policies with SDN for IoT Intrusion Detection", *ACM Sigcomm workshop on IoT Security and Privacy (IoT S&P)*, Budapest, Hungary, Aug 2018.
63. Ayyoob Hamza, Dinesha Ranathunga, **Hassan Habibi Gharakheili**, Matthew Roughan and Vijay Sivaraman, "Clear as MUD: Generating, Validating and Applying IoT Behavioral Profiles", *ACM Sigcomm workshop on IoT Security and Privacy (IoT S&P)*, Budapest, Hungary, Aug 2018.
64. Sharat Chandra Madanapalli, Minzho Lyu, Himel Kumar, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Real-time Detection, Isolation and Monitoring of Elephant Flows using Commodity SDN System", *IEEE/IFIP NOMS workshop on Experience Sessions*, Taipei, Taiwan, Apr 2018.
65. Thanchanok Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Data-Driven Monitoring and Optimization of Classroom Usage in a Smart Campus", *ACM IPSN*, Porto, Portugal, Apr 2018.
66. Thanchanok Sutjarittham, **Hassan Habibi Gharakheili**, Salil Kanhere and Vijay Sivaraman, "Demo Abstract: A Tool to Access and Visualize Classroom Attendance Data from a Smart Campus", *ACM IPSN Demos*, Porto, Portugal, Apr 2018.
67. **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Cloud Assisted Home Networks", *ACM CoNEXT workshop on Cloud Assisted Networks (CAN)*, Incheon, Republic of Korea, Dec 2017.
68. Prithvi Sriram, Veera Datla, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Enhancing Visibility into Home Networks using SDN", *IEEE ANTS*, Odisha, India, Dec 2017.
69. Arunan Sivanathan, Franco Loi, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Experimental Evaluation of Cybersecurity Threats to the Smart-Home", *IEEE ANTS*, Odisha, India, Dec 2017.
70. Franco Loi, Arunan Sivanathan, **Hassan Habibi Gharakheili**, Adam Radford and Vijay Sivaraman, "Systematically Evaluating Security and Privacy for Consumer IoT Devices", *ACM CCS collocated workshop on IoT Security and Privacy (IoT S&P)*, Texas, USA, Nov 2017.
71. Minzhao Lyu, Daniel Sherratt, Arunan Sivanathan, **Hassan Habibi Gharakheili**, Adam Radford and Vijay Sivaraman, "Quantifying the Reflective DDoS Attack Capability of Household IoT Devices", *ACM WiSec*, Boston, USA, Jul 2017.
72. Arunan Sivanathan, Daniel Sherratt, **Hassan Habibi Gharakheili**, Adam Radford, Chamith Wijenayake, Arun Vishwanath and Vijay Sivaraman, "Characterizing and Classifying IoT Traffic in Smart Cities and Campuses", *IEEE INFOCOM workshop on Smart Cities and Urban Computing (SmartCity)*, Atlanta, Georgia, USA, May 2017.
73. Arunan Sivanathan, Daniel Sherratt, **Hassan Habibi Gharakheili**, Vijay Sivaraman and Arun Vishwanath, "Low-Cost Flow-Based Security Solutions for Smart-Home IoT Devices", *IEEE ANTS*, Bangalore, India, Nov 2016.
74. Yu Wang, Chayut Orapinpatipat, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "TeleScope: Flow-Level Video Telemetry using SDN", *European Workshop on Software Defined Networks (EWSDN)*, The Hague, Netherlands, Oct 2016.
75. **Hassan Habibi Gharakheili**, Luke Exton and Vijay Sivaraman, "Managing Home Routers from the Cloud using Software Defined Networking", *IEEE Consumer Communications and Networking Conference (CCNC)*, Las Vegas, Nevada, USA, Jan 2016.
76. **Hassan Habibi Gharakheili**, Luke Exton, Vijay Sivaraman, John Matthews and Craig Russell, "Third-party Customization of Residential Internet Sharing using SDN", *International Telecommunication Networks and Applications Conference (ITNAC)*, Sydney, Australia, Dec 2015.

77. Vijay Sivaraman, **Hassan Habibi Gharakheili**, Arun Vishwanath, Roksana Boreli and Olivier Mehani, "Network-Level Security and Privacy Control for Smart-Home IoT Devices", *IEEE WiMoB Workshop on Internet of Things Communications and Technologies (STWiMob)*, Abu Dhabi, UAE, Oct 2015.
78. **Hassan Habibi Gharakheili**, Vijay Sivaraman, Arun Vishwanath, Luke Exton, John Matthews and Craig Russell, "Broadband Fast-Lanes with Two-Sided Control: Design, Evaluation and Economics", *IEEE/ACM IWQoS*, Portland, Oregon, USA, Jul 2015.
79. **Hassan Habibi Gharakheili**, Arun Vishwanath and Vijay Sivaraman, "Pricing User-Sanctioned Dynamic Fast-Lanes Driven by Content Providers", *IEEE INFOCOM workshop on Smart Data Pricing (SDP)*, Hong Kong, Apr 2015.
80. Sukhvir Notra, Muhammad Siddiqi, **Hassan Habibi Gharakheili**, Vijay Sivaraman and Roksana Boreli, "An Experimental Study of Security and Privacy Risks with Emerging Household Appliances", *IEEE CNS Workshop on Security and Privacy in Machine-to-Machine Communications (M2MSec)*, San Francisco, USA, Oct 2014.
81. **Hassan Habibi Gharakheili**, Jacob Bass, Luke Exton and Vijay Sivaraman, "Personalizing the Home Network Experience using Cloud-Based SDN", *IEEE WoWMoM workshop on SDN Architectures and Applications*, Sydney, Australia, Jun 2014.
82. Himel Kumar, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "User Control of Quality of Experience in Home Networks using SDN", *IEEE ANTS*, Chennai, India, Dec 2013.
83. Vijay Sivaraman, Tim Moors, **Hassan Habibi Gharakheili**, Dennis Ong, John Matthews and Craig Russell, "Virtualizing the Access Network via Open APIs", *ACM CoNEXT*, Santa Barbara, California, USA, Dec 2013.
84. **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Virtualizing National Broadband Access Infrastructure", *ACM CoNEXT student workshop*, Santa Barbara, California, USA, Dec 2013.
85. **Hassan Habibi Gharakheili**, Arun Vishwanath and Vijay Sivaraman, "Edge versus Host Pacing of TCP Traffic in Small Buffer Networks", *IFIP Networking*, Brooklyn, New York, USA, May 2013.
86. Pooya Ansarimehr, Saeedeh Barghinia, Zahra Mirsepassi and **Hassan Habibi Gharakheili**, "Identification and Modification of Improper Load Data used in Short-Term Load Forecasting", *IEEE PowerTech*, St. Petersburg, Russia, Jun 2005.
87. Pooya Ansarimehr, Saeedeh Barghinia, **Hassan Habibi Gharakheili** and Nasser Vafadar, "Short Term Load Forecasting for Iran National Power System using Artificial Neural Network and Fuzzy Expert System", *IEEE Power System Technology (PST)*, Kunming, China, Oct 2002.
88. Saeedeh Barghinia, Pooya Ansarimehr, **Hassan Habibi Gharakheili** and Nasser Vafadar, "Short Term Load Forecasting of Iran National Power System using Artificial Neural Network", *IEEE PowerTech*, Porto, Portugal, Sep 2001.

Patents:

89. Sharat Madanapalli, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Process and Apparatus for Estimating Real-Time Quality of Experience", *U.S. Patent No. 11,888,920*, granted Jan 2024.
90. Ayyoob Hamza, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "Apparatus and Process for Monitoring Network Behaviour of Internet-of-Things (IoT) Devices", *U.S. Patent No. 11,743,153*, granted Aug 2023.
91. Arunan Sivanathan, **Hassan Habibi Gharakheili** and Vijay Sivaraman, "An IoT Device Classification Apparatus and Process", *U.S. Patent No. 11,570,070*, granted Jan 2023.
92. Jay Anand, Arunan Sivanathan, Ayyoob Hamza, Ziwei Long and **Hassan Habibi Gharakheili**, "Computer-Implemented Method and System for Assessing the Risk Status of One or More Networked Devices

Using Best Practice Guidelines”, *PCT Patent PCT/AU2022/051204*, filed Oct 2022.

93. **Hassan Habibi Gharakheili**, Ayyoob Hamza and Vijay Sivaraman, “Combining Device Behavioral Models and Building Schema for Cyber-Security of Large-Scale IoT Infrastructure”, *PCT Patent PCT/IB2022/058136*, filed Aug 2022.
94. Yu Wang, **Hassan Habibi Gharakheili** and Vijay Sivaraman, “Method and Apparatus for Identifying and Classifying Video-Data”, *U.S. Patent No. 11,418,420*, granted Aug 2022.
95. Ayyoob Hamza, **Hassan Habibi Gharakheili** and Vijay Sivaraman, “Apparatus and Process for Detecting Network Security Attacks on IoT Devices”, *U.S. Patent No. 11,374,835*, granted Jun 2022.
96. Arman Pashamokhtari, Arunan Sivanathan, Ayyoob Hamza and **Hassan Habibi Gharakheili**, “Apparatus and Process for Monitoring Network Traffic of Networked Assets”, *AU Provisional Patent 2022901601*, filed Jun 2022.
97. Sharat Madanapalli, **Hassan Habibi Gharakheili** and Vijay Sivaraman, “Apparatus and Process for Detecting, Identifying, and Estimating User Experience of Online Games”, *PCT Patent WO2021042173A1*, filed Sep 2020.
98. Vijay Sivaraman, Sharat Madanapalli, Himal Kumar and **Hassan Habibi Gharakheili**, “Network Bandwidth Apportioning”, *PCT Patent WO2020172721A1*, filed Feb 2020.

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99. Michael Richardson, Jacques Latour and **Hassan Habibi Gharakheili**, “Loading Manufacturer Usage Description (MUD) URLs from QR Codes”, May 2022.

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