

Melody Moh
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Department of Computer Science
San Jose State University
Email: melody.moh@sjsu.edu
<http://www.cs.sjsu.edu/~melody>

Education

- 1991 Ph. D., Computer Science, Univ. of California, Davis (*Advisor: Dr. Charles Martel*)
- 1987 M. S., Computer Science, Univ. of California, Davis
- 1984 B. S., Electrical Engineering, National Taiwan University

Experience

- Aug 2019 – Present, Chair, Dept. of Computer Science, San Jose State Univ.
- Aug 2003 – Present, Professor, Dept. of Computer Science, San Jose State Univ.
- Dec 2016 – Jan 2017 & July – Aug 2017, Visiting Consultant, Nutanix (during school breaks)
- Aug 2014 – Feb 2015, Visiting Technology Consultant, Ericsson (while on leave)
- Oct 1999 – Jul. 2000, Visiting Technology Architect, 3Com Co. (while on sabbatical leave)
- Aug 1993 – Jul 2003, Assist./Assoc. Prof., Dept. of Math. & Computer Sc., San Jose State Univ.
- July 1991 - Jan. 1993, Software Engineer, Dept. of Distributed Computing Environment, Amdahl Co.
- Jul 1984 - Aug 1985, Research Assistant, Inst. of Information Science, Academia Sinica, Taiwan

Research Interests

- Machine Learning Applications
- Computer Science Education
- Information, Cloud and Network Security
- Edge and Cloud Computing
- Wireless Mobile Networks, Internet of Things

Courses Taught

- Cloud Computing
- Information Security
- Advanced Computer Communication Systems
- Advanced Topics in Wireless Mobile Networking
- Management of Computer Networks

Grants & Awards (Last 5 Years)

- A research gift from Dell, in the amount of \$45,000 (2nd PI: Teng Moh), for an 18-months project, “Online Learning of Deduplication Ratio between Logical and Physical Capacities in Deduplicated Storage Systems,” Feb 2020.
- Best Paper Runner-Up Award, at the 2019 Annual ACM Southeast Conference, Kennesaw, GA, USA, April 2019, for the paper entitled Randomized Load Balancing for Cloud Computing using Bacterial Foraging Optimization, with student co-author ZiYao Zhang.
- Honorable/Best Paper Award, at the 12th ACM International Conference on Ubiquitous Information Management and Communication (IMCOM), Langkawi, Malaysia, January 2018, for the paper entitled Cache Management for 5G Cloud Radio Access Networks, with student co-author Chin Tsai.

- A research gift from Nokia, in the amount of €30,000, for a one-year project, "Adapting Network Infrastructure Architecture with Machine Learning to Improve IoT Experience," Aug 2017.
- A research gift from Nokia, in the amount of €20,000, for a one-year project, "Adapting Network Infrastructure Architecture to Improve IoT Experience," Sept 2016.

Consulting

- For Nutanix, 12/2016 – 1/2017 and 8/2017, for a project entitled "Cloud Computing: A Case of Storage Virtualization."
- For Ericsson, 9/2014 – 4/2015, for a project entitled "Software Defined Networks."
- For Fujitsu Laboratories of America, 8/2006-7/2007, for a project entitled "Next-generation wireless mesh networks."
- For 3Com Technology Development Center, 1/1999-9/1999, for a project entitled "Architectural Study of a New Network Model."
- For 3Com Technology Development Center, 4/1998 - 10/1998, for a project on "Supporting multimedia traffic over the Ethernet."

Recent 5-Year Publication - Refereed Book, Book Chapters, and Journal Papers (* - SJSU Students)

1. M. Moh, K. P. Sharma, R. Agrawal, and V. Garcia Diaz (eds), *Smart IoT for Research and Industry*, Springer, to be published in June 2021.
2. S. Yen*, M. Moh, and T.-S. Moh. Detecting Compromised Social Network Accounts Using Deep Learning for Behavior and Text Analyses. *International Journal of Cloud Applications and Computing (IJCAC)*, Vol. 11, Is. 2, Apr – Jun 2021, IGI Global.
3. N. Mani*, M. Moh, and T.-S. Moh. Defending Deep Learning Models against Adversarial Attacks. *International Journal of Software Science and Computational Intelligence (IJSSCI)*, Vol 13, Is. 1, Jan – Mar 2021, IGI Global.
4. E. Tjon*, M. Moh, and T.-S. Moh. Overview of GANs for Image Synthesis and Detection Methods. In: *Adversary-aware Learning Techniques and Trends in Cybersecurity*, Dasgupta, P., Collins, J., and Mittu, R. (Eds.), Springer, pp. 85-101, 2021.
5. D. Hsu*, M. Moh, and T.-S. Moh. Drug Side Effect Frequency Mining over a Large Twitter Dataset using Apache Spark. In: *Handbook of Artificial Intelligence in Biomedical Engineering*, Krishnan, S., Kesavan, R., Surendiran, B., and Mahalakshmi, G. S. (eds.), Apple Academic Press, March 30, 2021.
6. R. Raju* and M. Moh. Cyber-Physical Systems in Healthcare: Review of Architecture, Security Issues, Intrusion Detection, and Defenses. In: *Recent Advances in Security, Privacy, and Trust for Internet of Things (IoT) and Cyber-Physical Systems (CPS)*. K.-C. Li, B. B. Gupta, and D. P. Agrawal (eds.). CRC Press, Dec. 2020.
7. D. Tjon*, M. Moh, and T.-S. Moh, Detecting DeepFakes for Future Robotic Systems. In: *Safety, Security, and Reliability of Robotic Systems Algorithms, Applications, and Technologies*. B. B. Tupta and N. Nedjah (eds.), CRC Press, Dec. 2020.
8. V. Ponnaganti, M. Moh, T.-S. Moh. In: *Deep Learning for LiDAR-Based Autonomous Vehicles in Smart Cities*. Juan Carlos Augusto (ed.), *Handbook of Smart Cities*, Springer, Cham, Oct. 2020.
9. Y. Tang*, M. Moh, and T.-S. Moh. *Traffic Flow Prediction with Convolutional Neural Network Accelerated by Spark Distributed Cluster*. In: *Big Data, IoT, and Machine Learning: Tools and Applications*, Rashimi Agrawal, Marcin Paprzycki, and Neha Gupta (eds.), CRC Press, July 2020.
10. A. Jong, M. Moh, and T.-S. Moh, *Virtual Try-on with Generative Adversarial Networks: A Taxonomical Survey*. Chapter in *Advancements in Computer Vision Applications in Intelligent Systems and Multimedia Technologies*, edited by Muhammad Sarfraz, published by IGI Global, pp. 76-100, May 2020.

11. M. Munoz* and M. Moh, Authentication of Smart Grid - the Case for Using Merkle Trees, chapter in *Cryptography: Breakthroughs in Research and Practice*. Noted as an [IGI Global Core Reference Title in Security & Forensics for 2019](#). [Information Resources Management Association](#) (USA), 2020.
12. M. Moh, D. Nguyen*, T.-S. Moh, and B. Khieu*, Blockchain for Efficient Public Key Infrastructure and Fault-Tolerant Distributed Consensus. Chapter in *Blockchain Cybersecurity, Trust, and Privacy*, edited by Choo, Kim-Kwang Raymond, Dehghantaha, Ali, and Parizi, Reza, published by Springer, pp. 69-97, Mar. 2020.
13. B. T. Khieu* and M. Moh, Neural Networks Applications in Hate Speech Detection. Chapter in *Neural Networks for Natural Language Processing*, edited by Sumathi S. and Janani M., published by IGI Global, pp. 188-204, Nov. 2019.
14. D. Pathinga Rajendiran*, Y. Tan*, and M. Moh, Dynamic Cache Management of Cloud RAN and Multi-Access Edge Computing for 5G Networks. Chapter in *Fundamental and Supportive Technologies for 5G Mobile Networks*, edited by Sherine Mohamed Abd El- and Hanan Hussein, published by IGI Global, pp. 126-158, Nov. 2019.
15. M. Moh and D. Pathinga Rajendiran*, On Efficient Cache Management of Cloud Radio Access Networks for 5G Mobile Networks. Chapter in *Chapter in Fundamental and Supportive Technologies for 5G Mobile Networks*, edited by Sherine Mohamed Abd El- and Hanan Hussein, published by IGI Global, pp. 159-186, Nov. 2019.
16. T. Kammara* and M. Moh, Identifying IoT-based Botnets. Chapter in *Botnets: Architectures, Countermeasures, and Challenges*, edited by Georgios Kambourakis, Marios Anagnostopoulos, Weizhi Meng, Peng Zhou, published by CRC Press, Oct. 2019.
17. B. Khieu* and M. Moh, Cloud-Centric Blockchain Public Key Infrastructure for Big Data Applications. Chapter in *Security, Privacy, and Forensics Issues in Big Data*, edited by Ramesh C. Joshi and Brij B. Gupta, published by IGI Global, Aug. 2019, pp. 125-140.
18. Heemany Shekhar* and M. Moh. Cracking Audio CAPTCHA with Machine Learning and Deep Learning Models. Chapter in *Machine Learning and Cognitive Science Applications in Cyber Security*, edited by Mohamed Amine Ferrag and Ahmed Ahmim, published by IGI Global, May 2019.
19. S. Yen* and M. Moh. Intelligent Log Analysis Using Machine and Deep Learning. Chapter in *Machine Learning and Cognitive Science Applications in Cyber Security*, ed. M. A. Ferrag and A. Ahmim, published by IGI Global, May 2019.
20. N. Mani* and M. Moh, Adversarial Attacks and Defense on Deep Learning Models for Big Data and IoT, chapter in *Handbook of Research on Cloud Computing and Big Data Applications in IoT*, edited by B. B. Gupta and D. P Agrawal, published by IGI Global, Apr. 2019, pp. 39-66.
21. R. Raju*, M. Moh, and T.-S. Moh, Compression of Wearable and Implantable Body Sensor Network (WIBN) Data, chapter in *Smart Data: State-of-the-Art Perspectives in Computing and Applications*, 1st ed., edited by K. Li, B. Ei Martino, L. T. Yang, and Q. Zhang, published by Chapman and Hall/CRC, Mar. 2019, pp. 215-242.
22. M. Moh, Online Learning and Heuristic Algorithms for 5G Cloud-RAN Load Balance, chapter in *Next-Generation Wireless Networks Meet Advanced Machine Learning Applications*, edited by I-S Comsa and R. Trestian, published by IGI Global, Jan. 2019, pp. 199-234.
23. R. Raju* and M. Moh, Using Machine Learning for Protecting the Security and Privacy of Internet-of-Things (IoT) Systems, chapter in *Fog and Edge Computing: Principles and Paradigms*, edited by R. Buyya and S. N. Srirama, published by Wiley, Jan. 2019, pp. 223-253.
24. B. Shahriari* and M. Moh, Intelligent Mobile Messaging for Smart Cities, chapter in *Handbook of Smart Cities, Software Services and Cyber Infrastructure*, edited by M. Maheswaran and E. Badidi, published by Springer, Nov. 2018, pp. 227-253.
25. M. Moh, T.-S. Moh, Y. Peng*, and L. Wu*. On adverse drug event extractions using twitter sentiment analysis. *Network Model Analysis in Health Informatics and Bioinformatics* (2017). December 2017, 6: 18. <https://doi.org/10.1007/s13721-017-0159-4>.

26. M. Munoz* and M. Moh, Authentication of Smart Grid - the Case for Using Merkle Trees, chapter in *Security Solutions and Applied Cryptography in Smart Grid Communications*, edited by Mohamed Amine Ferrag and Ahmed Ahmim, published by IGI Global, Nov. 2016.

Recent 5-Year Publication - Refereed Conference Papers (* - SJSU Student)

- [1] J. Qiao*, M. Moh, and T.-S. Moh, Fast Streaming Translation Using Machine Learning with Transformer. Accepted to present at *2021 Annual ACM Southeast Conference*, Virtual Conference, April 2021.
- [2] E. Tjon*, M. Moh, and T.-S. Moh. Eff-YNet: A Dual Task Network for DeepFake Detection and Segmentation. *Proc. of the 15th International Conference on Ubiquitous Information Management and Communication (IMCOM)*, IEEE Press, Jan 2021.
- [3] P. Ponnaganti*, M. Moh, and T.-S. Moh. Utilizing CNN for Object Detection in LiDAR Data for Autonomous Driving. *Proc. of the 15th International Conference on Ubiquitous Information Management and Communication (IMCOM)*, IEEE Press, Jan 2021.
- [4] D. Guo*, M. Moh, and T.-S. Moh. Vision-based Autonomous Driving for Smart City: A Case for End-to-End Learning Utilizing Temporal Information. *Proc. of 5th International Conference on Smart Computing and Communication (SmartCom 2020)*. Paris, Dec 2020.
- [5] D. Wang*, M. Moh, and T.-S. Moh. Using Deep Learning and Steam User Data for Better Video Game Recommendations. *Proc. of 2020 Annual ACM Southeast Conference*, Tempa, FL, April 2020.
- [6] D. Wang*, M. Moh, and T.-S. Moh. Using Deep Learning to Solve Google reCAPTCHA v2's Image Challenges. *Proc. of 2020 14th International Conference on Ubiquitous Information Management and Communication (IMCOM)*, IEEE Press, Taichung, Taiwan, Jan. 2020.
- [7] M. Moh, and T.-S. Moh, B. Khieu*. No "Love" Lost: Defending Hate Speech Detection Models Against Adversaries. *Proc. of 2020 14th International Conference on Ubiquitous Information Management and Communication (IMCOM)*, IEEE Press, Taichung, Taiwan, Jan. 2020.
- [8] S. Yen*, M. Moh, and T.-S. Moh. Semi-Supervised Log Anomaly Detection Through Sequence Modeling. *Proc. of IEEE 18th International Conference on Machine Learning and Applications (ICMLA 2019)*, Boca Raton, USA, Dec. 2019.
- [9] H. Shekhar*, M. Moh, and T.-S. Moh. Exploring Adversaries to Defend Audio CAPTCHA. *Proc. of IEEE 18th International Conference on Machine Learning and Applications (ICMLA 2019)*, Boca Raton, USA, Dec. 2019.
- [10] N. Mani*, M. Moh, and T.-S. Moh. Towards Robust Ensemble Defense Against Adversarial Attacks on Deep Learning Models. *Proc. of the IEEE GLOBECOM 2019*, Waikoloa, Hawaii, USA, Dec. 2019.
- [11] Y. Tang* and M. Moh, "Cache Management for Cloud RAN and Multi-Access Edge Computing with Dynamic Input." *Proc. of the 17th Int. Conf. on High Performance Comp. and Simulation (HPCS)*, Dublin, Ireland, July 2019, pp. 185-192.
- [12] Sui Kun Guan* Melody Moh, and Teng-Sheng Moh, "Context-based Multi-stage Offline Handwritten Mathematical Symbol Recognition using Deep Learning." *Proc. of the 17th International Conference on High Performance Computing and Simulation (HPCS)*, Dublin, Ireland, July 2019, pp. 185-192.
- [13] B. Khieu* and M. Moh. CBPKI: Cloud Blockchain-based Public Key Infrastructure. *Proc. of 2019 Annual ACM Southeast Conference*, Kennesaw, GA, USA, April 2019.
- [14] (Received Best Paper Runner-Up Award) Z. Zhang* and M. Moh. Randomized Load Balancing for Cloud Computing using Bacterial Foraging Optimization. *Proc. of 2019 Annual ACM Southeast Conference*, Kennesaw, GA, USA, April 2019.
- [15] D. Pathinga Rajendiran* and M. Moh. Adaptive Hierarchical Cache Management for Cloud RAN and Multi-Access Edge Computing in 5G Networks. *Proc. of International Conference on Ubiquitous Information Management and Communication (IMCOM)*, Phuket, Thailand, Jan 2019.

- [16] S. Pawar*, M. Moh, and T.-S. Moh. Micro-Expression Recognition Using Motion Magnification and Spatiotemporal Texture Map. *Proc. of International Conference on Ubiquitous Information Management and Communication (IMCOM)*, Phuket, Thailand, Jan 2019.
- [17] A. Sridharan*, M. Moh, and T.-S. Moh. Similarity Estimation for Indian Classical Music. *Proc. of IEEE 17th International Conference on Machine Learning and Applications (ICMLA 2018)*, Orlando, USA, Dec. 2018.
- [18] S. Gaikwad*, M. Moh, and D. Anastasiu. Data Structure for Efficient Line of Sight Queries. In *Proc. of 2018 ACM International Conference on Information and Knowledge Management*, Turin, Italy, Oct. 2018.
- [19] Moh, M. and R. Raju*. (Invited Paper) Machine learning techniques for security of Internet of Things (IoT) and fog computing systems. In *Proc. of IEEE International Conference on High Performance Computing and Simulation*, Orleans, France, July 2018.
- [20] Gao, L.* and M. Moh. Joint Computation Offloading and Prioritized Scheduling in Mobile Edge Computing. In *Proc. of IEEE International Conference on High Performance Computing and Simulation*, Orleans, France, July 2018.
- [21] R. Raju*, M. Moh, and T.-S. Moh. Compression of Wearable Body Sensor Network Data Using Improved Two-Threshold-Two-Divisor Data Chunking Algorithms. In *Proc. of IEEE International Conference on High Performance Computing and Simulation*, Orleans, France, July 2018.
- [22] K. Ross*, M. Moh, T.-S. Moh, and J. Yao. Multi-source data analysis and evaluation of machine learning techniques for SQL injection detection. *Proc. of 2018 Annual ACM Southeast Conference*, Richmond, KY, USA, March 2018.
- [23] G. Kaur* and M. Moh. Cloud Computing Meets 5G Networks: Efficient Cache Management in Cloud Radio Access Networks. *Proc. of 2018 Annual ACM Southeast Conference*, Richmond, KY, USA, March 2018.
- [24] T. Choudhari* and M. Moh. Prioritized Task Scheduling in Fog Computing. *Proc. of 2018 Annual ACM Southeast Conference*, Richmond, KY, USA, March 2018.
- [25] (Received Honorable/Best Paper Award) C. Tsai* and M. Moh. Cache Management for 5G Cloud Radio Access Networks. *Proc. of 12th ACM International Conference on Ubiquitous Information Management and Communication (IMCOM)*, Langkawi, Malaysia, January 2018.
- [26] G. Su* and M. Moh. Improving Energy Efficiency and Scalability for IoT Communications in 5G Networks. *Proc. of the 12th ACM International Conference on Ubiquitous Information Management and Communication (IMCOM)*, Langkawi, Malaysia, January 2018.
- [27] C. Tsai* and M. Moh. Load Balancing in 5G Cloud Radio Access Networks Supporting IoT Communications for Smart Communities. *Proc. of 2017 IEEE International Symposium on Signal Processing and Information Technology (ISSPIT)*, Bilbao, Spain, Dec 2017.
- [28] C. Tsai* and M. Moh, Abstract: Cache Management and Load Balancing for 5G Cloud Radio Access Networks, *ACM Symposium on Cloud Computing*, Santa Clara, USA, Sept 2017.
- [29] D. Hsu*, M. Moh, and T.-S. Moh. Mining Frequency of Drug Side Effects over a Large Twitter Dataset Using Apache Spark. *Proc. of 2017 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, held in Sydney, Australia, July 2017.
- [30] V. Karneyenka*, K. Mohta*, and M. Moh, "Location and Mobility Aware Resource Management for 5G Cloud Radio Access Networks," *Proc. of the International Conference on High Performance Computing and Simulation (HPCS)*, Genoa, Italy, July 2017.
- [31] B. Shahriari*, M. Moh, and T.-S. Moh, "Generic Online Learning for Partial Visible Dynamic Environment with Delayed Feedback - Online Learning for 5G C-RAN Load-Balancer," *Proc. of the International Conference on High Performance Computing and Simulation (HPCS)*, Genoa, Italy, July 2017.
- [32] Kevin Ross*, Melody Moh, Teng-Sheng Moh, and Jason Yao, "Poster: Multi-source data analysis for SQL injection detection," 38th IEEE Symposium on Security and Privacy, San Jose, USA, May 2017.

- [33] E. Zheng*, M. Moh, and T.-S. Moh, "Music Genre Classification: A N-gram based Musicological Approach," *Proc. of 7th IEEE International Advance Computing Conference (IACC-2017)*, Hyderabad, India, Jan 5-7, 2017.
- [34] Yan Zhu*, Melody Moh, and Teng-Sheng Moh, "Multi-Layer Text Classification with Voting for Consumer Reviews," *Proceedings of the 4th IEEE International Conference on Big Data (BigData)*, Washington, D.C., Dec. 2016, pp.1991-1999.
- [35] S. Natarajan* and M. Moh, "Recommending News Based on Hybrid User Profile, Popularity, Trends, and Location," *Proc. of the 17th IEEE Int. Conf. on Collaboration Technologies and Systems (CTS 2016)*, Orlando, FL, Oct 31 – Nov 4, 2016.
- [36] P. Mehetrey*, B. Shahriari*, and M. Moh, "Collaborative Ensemble-Learning based Intrusion Detection Systems for Clouds," *Proc. of the 17th IEEE Int. Conf. on Collaboration Technologies and Systems (CTS 2016)*, Orlando, FL, Oct 31 – Nov 4, 2016.
- [37] P. Nair*, M. Moh, and T. -S. Moh, "Using Social Media Presence for Alleviating Cold Start Problems in Privacy Protection," *Proc. of the 17th IEEE Int. Conf. on Collaboration Technologies and Systems (CTS 2016)*, Orlando, FL, Oct 31 – Nov 4, 2016.
- [38] B. Shahriari* and M. Moh, "Intelligent Mobile Messaging for Urban Networks," *Proceedings of the 12th IEEE Int. Conf. on Wireless and Mobile Computing, Networking and Communications (WiMob 2016)*, New York, October 17-19, 2016.
- [39] Y. Peng*, M. Moh, and T.-S. Moh, "Efficient Adverse Drug Event Extraction Using Twitter Sentiment Analysis," *Proceedings of the 8th IEEE/ACM Int. Conf. on Advances in Social Networks Analysis and Mining (ASONAM)*, San Francisco, California, August 2016, pp. 1101-1018.
- [40] S. Sathyanarayana* and M. Moh, Joint Route-Server Load Balancing in Software Defined Networks using Ant Colony Optimization, *Proceedings of the International Conference on High Performance Computing and Simulation (HPCS)*, Innsbruck, Austria, July 2016.
- [41] V. R. Reguri*, S. Kogatam*, and M. Moh, "Energy Efficient Traffic-Aware Virtual Machine Migration in Green Cloud Data Centers," *Proc. The 2nd IEEE International Conference on High Performance and Smart Computing (IEEE HPSC 2016)*, New York, Apr 2016.
- [42] V. Zhao*, M. Moh, and T.-S. Moh "Weighted Switching Hybrid Contextual-Aware (W-SHCA) Recommender System for Cold-Start Problems in Privacy Protection," *Proc. IEEE International Conference on Intelligent Data and Security (IEEE IDS 2016)*, New York, Apr 2016.
- [43] F. Yu*, M. Moh, and T.-S. Moh, "Towards Extracting Drug-Effect Relation from Twitter: A Supervised Learning Approach," *Proc. IEEE International Conference on Intelligent Data and Security (IEEE IDS 2016)*, New York, Apr 2016.