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Education

- **Ph.D. Candidate in Computer Science** ACT, Australia
Australian National University Aug 2018 - present
 - Research interest: Visual analytics, Human-centered computing, Big data visualisation
- **Master of Science in Computer Science** Daejeon, Korea
KAIST Mar 2009 - Aug 2011
 - Master Thesis: Achieving Bandwidth Guarantees in Virtual Data Centers using the Hose Model
 - Examine network traffic data on on-chip network to introduce a new scalable power-efficient structure
- **Bachelor of Science in Computer Science** Daejeon, Korea
KAIST Mar 2004 - Feb 2009
 - Interchange student program, Fudan University, Shanghai, China Sep 2006 - Feb 2007
 - Summer session program, UCSD, San Diego, USA Jul 2006 - Aug 2006

Work Experience

- **Research Engineer** Australian National University, ACT, Australia
ANU College of Engineering and Computer Science Sep 2016 - Present
 - Visualise knowledge graphs by connecting large collections of images and their descriptions.
 - Filter and cluster the extracted media features to automatically generate multimedia event summary documents.
- **Junior Research Engineer** LG Electronics, Seoul, Korea
Creative Innovation Center Mar 2011 - May 2015
 - Implement IoT devices for control legacy home appliances and new types of wearable devices.
 - Design a new UI/UX platform over Real-time OS and customised Android
 - Build interface protocols between devices and smart phone through Bluetooth and Implement a smart phone application that controls the device.
- **Research Engineer** LG Electronics, Seoul, Korea
Creative Innovation Center Aug 2011 - Feb 2013
 - Build the interface of touch input sensor for edge-bended phone
 - Responsible for developing new gesture dispatch interfaces for Android frameworks and application, as well as writing a device driver and control firmware for the touch input sensors.
- **Research Intern** Microsoft Research Asia, Beijing, China
Wireless & Network Group Aug 2010 - Feb 2011
 - Research on the traffic models and topology for data center networks.
 - Introduce a new traffic model considering traffic locality to provide bandwidth guarantees.
- **Campus Ambassador** Sun Microsystems, Inc., Seoul, Korea
Sun Campus Ambassador Sep 2008 - Feb 2009
 - Organise the second university Java algorithm contest.
 - Session translator at Sun Tech Day 2008 Seoul.
- **Engineering Intern** Naver Corporation, Seoul, Korea
Web-robot Development Team Mar 2008 - Sep 2008
 - Analyse the page url patterns and develop a web page crawler.

Publications

1. T. D. Nguyen, G. Lyall, A. Tran, M. Shin, N. G. Carroll, C. Klein, and L. Xie. Mapping topics in 100,000 real-life moral dilemmas. In *Proceedings of the International AAAI Conference on Web and Social Media*, 2022
2. M. Shin, J. Kim, Y. Han, L. Xie, M. Whitelaw, B. C. Kwon, S. Ko, and N. Elmqvist. Roslingifier: Semi-automated storytelling for animated scatterplots. *IEEE Transactions on Visualization and Computer Graphics*, 2022
3. M. Shin, A. Tran, S. Wu, A. Mathews, R. Wang, G. Lyall, and L. Xie. Attentionflow: Visualising influence in networks of time series. In *Proceedings of the 14th ACM International Conference on Web Search and Data Mining*, 2021
4. M. Shin, A. Soen, B. T. Readshaw, S. M. Blackburn, M. Whitelaw, and L. Xie. Influence flowers of academic entities. In *2019 IEEE Conference on Visual Analytics Science and Technology*, 2019
5. E. Berger, S. M. Blackburn, C. Brodley, H. Jagadish, K. S. McKinley, M. A. Nascimento, M. Shin, K. Wang, and L. Xie. Goto rankings considered helpful. *Communications of the ACM*, 62(7), 2019
6. M. Shin, D. Kim, J. H. Lee, U. Bista, and L. Xie. Visualizing graph differences from social media streams. In *Proceedings of the Twelfth ACM International Conference on Web Search and Data Mining*. Association for Computing Machinery, 2019
7. U. Bista, A. Mathews, M. Shin, A. K. Menon, and L. Xie. Comparative document summarisation via classification. In *Proceedings of the AAAI Conference on Artificial Intelligence*, 2019
8. D. Chen, D. Kim, L. Xie, M. Shin, A. K. Menon, C. S. Ong, I. Avazpour, and J. Grundy. Pathrec: Visual analysis of travel route recommendations. In *Proceedings of the Eleventh ACM Conference on Recommender Systems*. ACM, 2017
9. J. Lee, H. Kim, M. Shin, J. Kim, and J. Huh. Mutually aware prefetcher and on-chip network designs for multi-cores. *IEEE Transactions on Computers*, 63(9), Sept 2014
10. M. Shin and J. Kim. Leveraging torus topology with deadlock recovery for cost-efficient on-chip network. In *2011 IEEE 29th International Conference on Computer Design*, Oct 2011
11. J. Lee, M. Shin, H. Kim, J. Kim, and J. Huh. Exploiting mutual awareness between prefetchers and on-chip networks in multi-cores. In *2011 International Conference on Parallel Architectures and Compilation Techniques*, Oct 2011
12. M. Shin. *Achieving bandwidth guarantees in virtual data centers using the hose model*. Master thesis, KAIST, Aug 2011
13. M. Shin, C. Guo, and J. Kim. Achieving bandwidth guarantees in virtual data centers using the hose model. In *The USENIX Workshop on Hot Topics in Cloud Computing (HotCloud), Poster*, June 2011

Patents

1. An insole, A digital device and method for controlling the same (co-inventor), KR 10-2015-0102976
2. Mobile terminal and method for controlling the same (co-inventor), KR 10-2015-0093417
3. An insole, A mobile terminal and method for controlling the same (co-inventor), KR 10-2015-0082430
4. Terminal and method for controlling an output of AV data thereof (co-inventor), KR 10-2014-0021118
5. Mobile terminal and method for providing three-dimensional images thereof, KR 10-2014-0021116
6. Wearable glass-type device and method of controlling the device (co-inventor), KR 10-2013-0139293

7. Mobile terminal, KR 10-2013-0011661
8. Routing system and method using torous topology in on-chip network (co-inventor), KR 10-2011-0142500

Awards

1. Women in Data Science Award, Data to Decisions CRC, Australia, 2017

Skills

Programming: C/C++, Python, JavaScript, Java, XML, SQL, Matlab, Bash, Unix Shell

Operating Systems: RTOS, Android, Linux, Mac OS X, UNIX

Web: Django, HTML, CSS, Bootstrap

Software and Tool: NLTK, Scikit, TensorFlow, Git, Gerrit, Atlassian Tools (Jira, Bitbucket, Confluence), Trace32, Gdb, Keil, IAR, Eclipse, Android Studio

System Frameworks / UX architecture

Android application communicating with other devices

Multithreaded OS structure

Device Driver and Firmware

Good troubleshooting / problem solving skills