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Education

- **Ph.D. Candidate in Computer Science**
Aug 2018 - Jul 2024 *Australian National University, Australia*
 - Thesis: Visual Analytics of Evolving Graphs
 - Research interest: Visual analytics, Human-centered computing, Big data visualization
- **Master of Science in Computer Science**
Mar 2009 - Aug 2011 *KAIST, Korea*
 - 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**
Mar 2004 - Feb 2009 *KAIST, Korea*
 - Interchange student program, Fudan University, Shanghai, China *Sep 2006 - Feb 2007*
 - Summer session program, UCSD, San Diego, USA *Jul 2006 - Aug 2006*

Work Experience

- **Chief Technical Officer**
Dec 2021 - Present *HSJ & Company, Korea*
 - Lead the technical team to design and implement advanced algorithms to optimize tax planning strategies for users.
 - Develop a visual analytics tool that enhances the understanding of property taxes and assists users in planning property transfers.
- **Research Engineer**
Sep 2016 - Jun 2023 *ANU College of Engineering and Computer Science, Australia*
 - Developed tools for visualizing knowledge graphs, linking large collections of images with descriptive metadata.
 - Created multimedia event summary documents by filtering and clustering extracted media features.
- **Junior Research Engineer**
Mar 2013 - May 2015 *Creative Innovation Center, LG Electronics, Korea*
 - Developed IoT devices to control legacy home appliances and wearables.
 - Designed a new UI/UX platform for Real-time OS and customized Android systems.
 - Built communication protocols between devices and smartphones via Bluetooth and developed a smartphone app for device control.
- **Research Engineer**
Aug 2011 - Feb 2013 *Creative Innovation Center, LG Electronics, Korea*
 - Developed the interface of touch input sensors for edge-bended phones.
 - Created gesture dispatch interfaces for Android frameworks, and developed device drivers and control firmware for touch sensors.
- **Research Intern**
Aug 2010 - Feb 2011 *Wireless & Network Group, Microsoft Research Asia, China*
 - Conducted research on traffic models and topologies for data center networks.
 - Developed a new traffic model with enhanced locality awareness to ensure bandwidth guarantees.

- **Campus Ambassador**
Sep 2008 - Feb 2009 *Sun Microsystems, Inc., Korea*
 – Organized and managed the second university Java algorithm contest. Served as a session translator at Sun Tech Day 2008 in Seoul.
- **Engineering Intern**
Mar 2008 - Sep 2008 *Web-robot Development Team, Naver Corporation, Korea*
 – Analyzed page URL patterns and developed web page crawlers to improve data indexing efficiency.

Publications

1. J. Kim, H. Lee, D. M. Nguyen, M. Shin, B. C. Kwon, S. Ko, and N. Elmqvist. DG comics: Semi-automatically authoring graph comics for dynamic graphs. *IEEE Transactions on Visualization and Computer Graphics*, 2024
2. 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
3. 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
4. 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
5. 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
6. 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
7. 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
8. 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
9. 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
10. 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
11. 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
12. 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
13. M. Shin. *Achieving bandwidth guarantees in virtual data centers using the hose model*. Master thesis, KAIST, Aug 2011
14. 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. Method and System for Visualizing Data Differentiation US20220067273
2. An insole, A digital device and method for controlling the same, KR1020150102976
3. Mobile terminal and method for controlling the same, KR1020150093417
4. Insole, mobile terminal and method of controlling therefor US20160366266
5. An insole, A mobile terminal and method for controlling the same, KR1020150082430
6. Terminal and method for controlling an output of AV data thereof, KR1020140021118
7. Mobile terminal and method for providing three-dimensional images thereof, KR1020140021116
8. Wearable glass-type device and method of controlling the device, KR1020130139293
9. Mobile terminal, KR1020130011661
10. Routing system and method using torous topology in on-chip network, KR1020110142500

Awards

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