

Seon Ho Kim

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Computer Science Dept.
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EDUCATION

Ph.D. in Computer Science Aug. 99
University of Southern California, Los Angeles, CA
• Advisor: Dr. Shahram Ghandeharizadeh
• Dissertation: *“Design of Continuous Media Servers with Multi-zone Disk Drives”*

Master of Science in Electrical Engineering May 94
University of Southern California, Los Angeles, CA

Bachelor of Science in Electronic Engineering Feb. 86
Yonsei University, Seoul, Korea

EXPERIENCES

Assistant Professor Sep. 99 – Present
Computer Science Dept., University of Denver, Denver, CO July 01 – Present
Mathematics and Computer Science Dept., University of Denver, Denver, CO Sep. 99 – June 01

Research Assistant Sep. 98 – Aug. 99
Integrated Media Systems Center, USC, Los Angeles, CA
• Research on latency issues of interactive multimedia applications
• Research on the continuous display techniques with heterogeneous disks

Research Assistant Jan. 95 – Aug. 98
Computer Science Dept., USC, Los Angeles, CA
• Researched on multimedia database, storage system, continuous media server
• Participated in implementing a research prototype of continuous media server

Teaching Assistant Jan. 98 – May. 98
Computer Science Dept., USC, Los Angeles, CA
• CSCI485: File and Database Management

Summer Research Intern Jun. 97 – Aug. 97
Panasonic Technologies, Inc., Princeton, NJ
• Researched on digital editing system for the Universal Studios at Hollywood

Senior Software Engineer Nov. 89 – Apr. 92
Samsung Electronics Co, Ltd., Korea
• Designed and developed voice mailing system (VMS)
• Designed and developed automatic response system (ARS)

Software Engineer Dec. 85 – Oct. 89
Samsung Semiconductor and Telecommunication Co, Ltd., Korea
• Developed telecommunication system software (PABX)

TEACHING

During nine years at the University of Denver, I have taught 38 classes in total (4.22 classes per year). Each class was a four quarter-hour class (4 hours of lecture per week \times 10 weeks per quarter = 40 lecture hours). Out of 38 classes I taught, 33 were upper undergraduate or graduate courses (3000 and 4000 levels).

COMP 2400: Software Tools
COMP 2691: Introduction to Computer Organization
COMP 3361: Operating Systems I
COMP 3693: Computer Architecture
COMP 3341: Multimedia Systems
COMP 3410: World Wide Web Programming
COMP 3421: Database Organization and Management I
COMP 3422: Database Organization and Management II
COMP 3704: Special Topics - Web Multimedia
COMP 4704: Special Topics - Streaming Media, media servers

RESEARCH INTERESTS

Spatial Databases, Geographic Information Systems, Storage Systems, Multimedia Systems

PUBLICATIONS

Refereed Journal Paper

Seon Ho Kim, Byunggu Yu, Jaeyoung Chang
Zoned Partitioning Tree-like Access Methods
Information Systems, 33(03), pp. 315-331, Elsevier, May 2008.

Byunggu Yu, Seon Ho Kim, and Jaeyoung Chang
An Efficient Storage Technique of Hierarchical Index Structures in Multi-zoned Disk Environments
Journal of Korean Institute of Information Scientists and Engineers: Database, Vol. 34, No. 4, pp. 315-327, August 2007.

Seon Ho Kim, Hong Zhu, and Roger Zimmermann
Zoned-RAID
ACM Transactions on Storage, 03(01), pp. 1-17, ACM Press, March 2007.

Shahram Ghandeharizadeh, Seon Ho Kim
Design of Multi-user Editing Servers for Continuous Media
Journal of the Multimedia Tools and Applications, 11(1), pp. 101-127, Kluwer Academic Publishers, May 2000.

Textbook, Book Chapter, Article

Abhaya Asthana and Seon Ho Kim
Multimedia Servers
Article in the *Encyclopedia of Multimedia*, Springer, ISBN: 0-387-24395-X, pp. 580-588, 2006.

Seon Ho Kim
Multimedia Storage Organization
Article in the *Encyclopedia of Multimedia*, Springer, ISBN: 0-387-24395-X, pp. 588-595, 2006.

Seon Ho Kim
Scheduling in Multimedia Systems
Article in the *Encyclopedia of Multimedia*, Springer, ISBN: 0-387-24395-X, pp. 767-775, 2006.

Ali Dashti, Seon Ho Kim, Cyrus Shahabi, Roger Zimmermann
Streaming Media Server Design
(390 page textbook with a CD-ROM of server software that we developed)
Prentice Hall PTR, April 2003.

Shahram Ghandeharizadeh, Seon Ho Kim
Continuous Display of Video Objects Using Heterogeneous Disk Subsystems
A book chapter in *Handbook of Video Databases*, CRC Press, ISBN: 0-849-37006-X, pp. 865-890, Sep. 2003.

Shahram Ghandeharizadeh, Seon Ho Kim, Cyrus Shahabi, Roger Zimmermann.
Placement of Continuous Media in Multi-Zone Disks.
A book chapter in *Multimedia Information Storage and Management*, Kluwer Academic Publishers, ISBN: 0-7923-9764-9, pp. 23-57, Aug. 1996.

Refereed Conference/Workshop Paper

Shayma Alkobaisi, Petr Vojtechovsky, Wan D. Bae, Seon Ho Kim and Scott T. Leutenegger
The Truncated Tornado in TMBB: A Spatiotemporal Uncertainty Model for Moving Objects
Accepted, to appear in *19th International Conference on Database and Expert Systems Applications (DEXA 2008)*, Sep. 2008.

Shayma Alkobaisi, Wan D. Bae, Seon Ho Kim, and Byunggu Yu
MBR Models for Uncertainty Regions of Moving Objects
13th International Conference on Database Systems for Advanced Applications (DASFAA'08), LNCS 4947, pp. 126-140, March 2008.

Wan D. Bae, Shayma Alkobaisi, Seon Ho Kim, Sada Narayanapa, and Cyrus Shahabi
Supporting Range Queries on Web Data Using k Nearest Neighbor Search
7th International Symposium on Web and Wireless GIS (W2GIS 2007), LNCS 4857, pp. 61-75, November 2007.

Wan D. Bae, Petr Vojtechovsky, Shayma Alkobaisi, Scott T. Leutenegger, and Seon Ho Kim
An Interactive Framework for Raster Data Spatial Joins
15th ACM Symposium on Advances in Geographic Information Systems (ACM GIS 2007), pp. 19-26, November 2007.

Wan D. Bae, Shayma Alkobaisi, Seon Ho Kim, Sada Narayanapa, and Cyrus Shahabi
Supporting Range Queries on Web Data Using k Nearest Neighbor Search
10th International Workshop on Web and Databases (WebDB 2007), poster, June 2007.

Byunggu Yu, Seon Ho Kim, Shayma Alkobaisi, Wan D. Bae, Thomas Bailey
The Tornado Model: Uncertainty Model for Continuously Changing Data
the 12th International Conference on Database Systems for Advanced Applications (DASFAA'07), LNCS 4443, pp. 624-636, April 2007.

Tim Marsh, Kiyoungh Yang, Cyrus Shahabi, and Seon Ho Kim
Immersidata Management and Analysis For Game Development Through Staying There
First International Conference on Digital Interactive Media Entertainment (DIME2006), Oct. 2006.

- Byunggu Yu and Seon Ho Kim
 Interpolating and Using Most Likely Trajectories in Moving-Objects Databases
17th International Conference on Database and Expert Systems Applications (DEXA 2006), LNCS 4080, pp. 718-727, Sep. 2006.
- J. Song, K. C. Kim, Y. W. Choi, H. R. Byun, S. H. Kim, S. Y. Chi, D. K. Jang, Y. K. Chung
 Text Region Extraction and Text Segmentation on Camera-captured Document Style Images
Proceedings of 8th International Conference in Data Analysis and Recognition (ICDAR2005), short paper, pp. 172-176, Oct. 2005.
- Byunggu Yu and Seon Ho Kim
 An Efficient Zoning Technique for Multidimensional Access Methods
Proceedings of the VLDB Workshop on Trends in Enterprise Application Architecture (TEAA2005), Aug. 2005. (also appears in LNCS 3888, pp. 129-143, 2006)
- Byunggu Yu and Seon Ho Kim
 Zoning Multidimensional Access Methods for Analytical Database Applications
Proceedings of the 3rd International Conference on Computer Science and its Applications (ICCSA-2005), pp. 191-196, June 2005.
- Ali E. Dashti and Seon Ho Kim and Roger Zimmermann
 Zoned-RAID for Multimedia Database Servers
Proceedings of The 10th International Conference on Database Systems for Advanced Applications (DASFAA'05), LNCS 3453, pp. 461-473, April 2005.
- Byunggu Yu, Seon Ho Kim, Thomas Bailey, and Ruben Gamboa
 Curve-Based Representation of Moving Object Trajectories
Proceedings of the International Database Engineering & Applications Symposium (IDEAS'04), pp. 419-425, July 2004.
- Seon Ho Kim, Yong Lu
 Dynamic Reconfiguration of a Multimedia Server with Changing Access Frequency
Proceedings of the Internet Multimedia Management Systems III, Part of SPIE's ITCOM 2002, pp. 284-295, Aug. 2002.
- Seon Ho Kim, Yong Lu, Hailin Wu
 Design of Continuous Media Servers in Support of Interactive Personalized Presentation
Proceedings of the Internet Multimedia Management Systems II, Part of SPIE's ITCOM 2001, pp. 215-225, Aug. 2001.
- Seon Ho Kim
 Bulk Prefetching with Deadline-Driven Scheduling to Minimize Startup Latency of Continuous Media Servers
 In the *Proceedings of the IEEE International Conference on Multimedia and Expo (ICME2001)*, pp. 625-628, Aug. 2001.
- Seon Ho Kim
 Replication Techniques to Minimize the Startup Latency of Continuous Media Servers
Proceedings of the World Multiconference on Systemics, Cybernetics and Informatics (SCI 2001), pp. 185-190, July 2001.
- Shahram Ghandeharizadeh, Seon Ho Kim
 A Comparison of Alternative Continuous Display Techniques with Heterogeneous Multi-zone Disks
Proceedings of the 8th International Conference on Information and Knowledge Management, pp. 442-449, Nov. 1999.

Seon Ho Kim, Shahram Ghandeharizadeh
Design of Multi-user Editing Servers for Continuous Media
Proceedings of the IEEE 8th Workshop on Research Issues in Data Engineering (RIDE'98), pp. 9-16, Feb. 1998.

Shahram Ghandeharizadeh, Roger Zimmermann, Seon Ho Kim, Weifeng Shi, Jaber Al-Marri
Scalable Video Browsing Techniques for Intranet Video Servers.
Proceedings of the 7th Workshop on Information Technologies and Systems, pp. 209-218, Dec. 1997.

Shahram Ghandeharizadeh, Seon Ho Kim, Weifeng Shi, Roger Zimmermann.
On Minimizing Startup Latency in Scalable Continuous Media Servers.
Proceedings of the Multimedia Computing and Networking, Proc. SPIE 3020, pp. 144-155, Feb. 1997.

Shahram Ghandeharizadeh, Seon Ho Kim.
Striping in Multi-Disk Video Servers.
Proceedings of the High-Density Data Recording and Retrieval Technologies, Proc. SPIE 2604, pp. 88-102, Oct. 1995.

Shahram Ghandeharizadeh, Seon Ho Kim, Cyrus Shahabi.
On Configuring a Single Disk Continuous Media Server.
Proceedings of the ACM SIGMETRICS/PERFORMANCE, pp. 37-46, May 1995.

Dissertation

Seon Ho Kim
Design of Continuous Media Servers with Multi-zone Disk Drives
Dissertation, University of Southern California, Aug. 1999.

Papers in Preparation

Wan D. Bae, Shayma Alkobaisi, Seon Ho Kim, Sada Narayanappa, Cyrus Shahabi
Exploiting k -Nearest Neighbor Searches for Spatial Range Queries on Remote Web Data
Submitted.

Sakire Arslan Ay, Roger Zimmermann, Seon Ho Kim
Viewable Scene Modeling for Geospatial Video Search
Submitted.

PATENTS

Seon Ho Kim
Automatic Deletion of Mails in Voice Mailing Systems.
Korean Patent Number: 10-1991-0008448, 1991.

Seon Ho Kim
Configuration of Voice Mail Data Structure.
Korean Patent Number: 10-1990-0016789, 1990.

Seon Ho Kim
Duplicating Disks in Interactive Voice Response Systems (IVR).
Korean Patent Number: 10-1990-0005509, 1990.

OTHER PROFESSIONAL CONTRIBUTIONS

NSF Panellist

- NSF IIS-IDM Panellist, March 2004.

Reviewer

- IEEE Transactions on Multimedia
- IEEE Computer
- IEEE Transactions on Parallel and Distributed Systems
- IEEE Transaction on Knowledge and Data Engineering
- IEEE Transactions on Broadcast
- Journal of Multimedia Tools and Applications by Kluwer Academic Publishers
- Journal of Software Practice & Experience by John Wiley & Sons
- ACM Multimedia Conference by ACM SIGMM
- ACM Multimedia Systems Journal
- Journal of Computer Science and Technology by Chinese Academy of Science

Editorial Board

- Associate Editor in Digital Symposium Collection (DiSC'04) project by ACM SIGMOD, 2004.
- Associate Editor in the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04), June 2004.

Conference/Workshop Organization Committee

- Publications Co-chair: *9th IEEE International Symposium on a World of Wireless, Mobile and Multimedia Networks 2008 (WoWMoM 08)*, June 2008.
- Co-chair: ACM Workshop on *Next Generation Residential Broadband Challenges* in conjunction with the ACM Multimedia Conference, New York City, Oct. 2004.

Programming Committee

- IASTED International Conference on Internet and Multimedia Systems and Applications (IMSA), 2008.
- International Multimedia Modeling Conference (MMM), 2007 - 2009.
- SPIE/ACM Multimedia Computing and Networking Conference (MMCN), 2007 - 2009.
- International Conference on Trends in Enterprise Application Architecture (TEAA 2006), November 2006.
- Workshop on Data Storage Devices and Systems (DS2), as a part of the 2006 International Conference on Computational Science and its Applications, May 2006.
- International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'04), June 2004.

PROFESSIONAL PRESENTATION

Invited Talk (Selected)

Zoned-RAID for Multimedia Database Servers, CS Seminar, Seoul National University, Seoul, Korea, May 2005.

Curve-Based Representation of Moving Object Trajectories, Distinguished Lecture, Kuwait University, Kuwait, December 2003.

Internet Telephony and Multimedia Communication, Samwoo Asia Telecommunications Co., Ltd., Beijing, China, June 2003.

Multimedia Server Design, CS Seminar, Colorado School of Mines, Golden, Colorado, September 2002.

Multimedia and Web Security, Distinguished Lecture, Information Technology Academy, Korean International Trade Institute, Seoul, Korea, July 2002.

Multimedia Servers, Distinguished Lecture, Information Technology Academy, Korean International Trade Institute, Seoul, Korea, February 2002.

Invited Tutorial

Multimedia Systems, 10th Internet Conference & Exhibition, Seoul, Korea, July 2002.

STUDENTS

Ph.D. Thesis Advisor

- Wan D. Bae (Co-advising with Dr. Scott Leutenegger)
"Online Query Processing in Geographic Information Systems", 2007.
Appointed as Assistant Professor at the University of Wisconsin at Stout.
- Shayma Alkobaisi (Co-advising with Dr. Scott Leutenegger)
"Managing Uncertainty in Spatiotemporal Databases", 2008.
Appointed as Assistant Professor at the United Arab Emirates University.

Ph.D. Thesis Committee

- Sean Lao, University of Denver, 2000.

UNIVERSITY SERVICE ACTIVITIES

Departmental Service

- CS colloquium chair: search and invite speakers, organize the colloquium (99-00, 01-02)
- Chair of faculty recruit committee (00-01)
- Member of faculty recruit committee (05-06)
- Equipment committee (00-01, 02-03)
- Assessment committee (03-05)
- Graduate committee: revise graduate requirement (01-03)

- Graduate admission: review graduate applications (00-03)
- Upgrade CS undergraduate bulletin (99-01)
- Upgrade CS graduate bulletin (01-02)

University Service

- DU Partners IN Scholarship (PINS) committee: review undergraduate student research proposals (03-07)
- DU ISSS (International Student and Scholar Services) Faculty Advisory Committee member: advise and help ISSS activities, participate meetings and events (04-07)
- Faculty advisor of DU Korean Students Association: advise and help DUKSA activities, participate meetings and events (04-07)
- Participate Denver Days and SOAR (Student Orientation and Registration)

ASSOCIATION AND MEMBERSHIP

Senior Member of IEEE: Computer Society
Member of ACM: SIGMOD, SIGMM

HONORS

Best paper award in database track, SCI 2001, 2001.
Samsung Electronics Humantech Thesis Prize, 1997.
USC Academic Achievement Award, 1994.