

Jae-wook Ahn

Research Interests

Human-Computer Interaction, adaptive information access, user modeling, information retrieval, information visualization, social network analysis, adaptive E-learning

Education

- 2004–2010 **Doctor of Philosophy in Information Science**, *School of Information Sciences, University of Pittsburgh*, Pittsburgh, PA, USA.
- Dissertation: Adaptive Visualization for Focused Personalized Information Retrieval
 - Advisor: Dr. Peter Brusilovsky
- 2000–2003 **Medical leave**, Diagnosed as aplastic anemia in 2000. It turned out to be benign after two years of examinations and observations.
- 1997–2000 **Master of Arts in Library and Information Science**, *Yonsei University*, Seoul, Korea.
- 1991–1997 **Bachelor of Arts in Sociology**, *Yonsei University*, Seoul, Korea.

Professional Experiences

- 2010–Current **NSF/CRA Postdoctoral CIFellow (Computing Innovation Fellow)**, *Human-Computer Interaction Lab, University of Maryland*, supervised by Dr. Ben Shneiderman, College Park, MD.
- Dynamic network evolution visualization and analysis
 - Usability testing and long-term case study
- Summer 2009 **Research Internship**, *Telefónica Research*, supervised by Dr. Xavier Amatriain, Barcelona, Spain.
- Expert-based music collaborative filtering and client-oriented user interface
- 2004–2010 **Graduate Student Researcher**, *School of Information Sciences, University of Pittsburgh*, supervised by Dr. Peter Brusilovsky and Dr. Daqing He, Pittsburgh, PA.
- Worked on personalized search user interface, visualization, adaptive E-learning
 - System design and construction, usability testing, user study, user behavior experiment, log analysis, eye-tracking analysis
 - Supported by NSF, DARPA, and Carnegie Museum of Arts
- 2005 **Patient Scheduling System Programmer**, *University of Pittsburgh Medical Center (UPMC)*, Pittsburgh, PA.
- Maintained a patient scheduling system for the UPMC Magnetic Resonance Research Center

- 2005-2006 **Graduate Student Assistant**, *School of Information Sciences, University of Pittsburgh*, supervised by Dr. Peter Brusilovsky and Dr. Daqing He, Pittsburgh, PA.
- Teaching Assistant for database management and information retrieval courses
- 1998-1999 **Web Programmer (part time)**, *LG International Corporation*, Seoul, Korea.
- 1998 **Lecturer**, *Yonsei Extension, Yonsei University*, Seoul, Korea.

Research Experiences

- 2011-Current **Analyzing the Social Network and Evolution of Technology-Mediated Social Participation (CRA, NSF)**, *Human-Computer Interaction Lab, University of Maryland*, College Park, MD.
- Analyzed the latent and explicit social network of Flickr photos contributed by the Encyclopedia of Life project.
 - Developed a temporal network visualization tool to analyze the network evolution of the participants of the TMSP service.
- 2010-Current **Supporting A Nation of Neighbors with Community Analysis Visualization Environment (CRA, NSF)**, *Human-Computer Interaction Lab, University of Maryland*, College Park, MD.
- Social network evolution analysis and visualization for a neighborhood watch service.
 - Developed a tool for temporal network visualization and the idea was presented at the Social Computing, Behavioral-Cultural Modeling and Prediction (SBP) 2011 Conference.
 - A task taxonomy of network evolution analysis is in preparation to be submitted to the Transactions of Visualization and Computer Graphics (TVCG) journal.
- 2009-2010 **Adaptive Visualization for Personalized Search**, *University of Pittsburgh*, Pittsburgh, PA.
- **Dissertation study:** A full-fledged user study that tested an adaptive visualization (Adaptive VIBE) for personalized search result representation (Results were submitted to IP&M and in preparation to be submitted to the JASIS&T journals).
 - **Pilot studies:** Tested the Adaptive VIBE (Visual Information Browsing Environment) visualization (UMAP 2010, Information Visualization Journal, and HCIR 2009).
- 2009 **Wisdom of the Few: Expert-based Collaborative Filtering Project**, *Telefónica Research*, Barcelona, Spain.
- Collaborative music recommendation project based on expert wisdom
 - Developed a distributed collaborative filtering architecture and a multi-platform UI using Adobe AIR (WI-IAT 2010)
- 2009 **Collaborative Project: User-centric, Adaptive and Collaborative Information Filtering (NSF)**, *University of Pittsburgh*, Pittsburgh, PA.
- Personalized CiteULike search – implemented a language model-based re-ranking engine and a Firefox plug-in.
- 2008 **Carnegie Museum of Arts Digital Photo Library Project**, *University of Pittsburgh*, Pittsburgh, PA.
- Digital library project for “Teenie Harris Archive” of Carnegie Museum of Arts
 - Named-entity based search/browsing, faceted-browsing, social annotation (ASIS&T 2010)

- 2008 **Search Visualization for Mobile Devices**, *University of Pittsburgh*, Pittsburgh, PA.
- First-stage user study of a platform independent mobile search visualization tool (HCIR 2009).
- 2005–2007 **GALE Program (DARPA)**, *University of Pittsburgh*, Pittsburgh, PA.
- Designed and developed prototype news search and filtering systems focusing on personalization and advanced user interfaces
 - Conducted user studies and published the results at major international conferences and journals as the first author.
 - **YourNews Study**: Content-based news recommendation with “Open User Model” – viewable/editable user profiles (WWW 2007).
 - **TaskSieve Study**: A flexible mediation of user query and user model UI for personalized news search (WWW 2008).
 - **NameSieve Study**: Named-entity based pseudo faceted search and browsing user interface (Information Processing & Management).
- 2004–2010 **Personalized Access to Open Corpus Educational Resources through Adaptive Navigation Support and Adaptive Visualization (NSF)**, *University of Pittsburgh*, Pittsburgh, PA.
- Designed, implemented, and conducted studies about social search and adaptive visualization tools for educational domains.
 - **Personalized Search Study**: Searching by social information such as group traffic and annotations (JCDL 2005). An extended version that stresses the query and the task model mediation is being prepared.
 - **ADVISE (Adaptive Document Visualization for Education) Visualization Study**: Reference point based visualization (ADVISE VIBE) and force-directed visualization (ADVISE 2D) were used for visualization of educational resources such as quizzes and examples for computer programming classes (Information Visualization 2006 and E-Learn 2006).

Research Grants and Awards

- 2010–2012 **Computing Innovation Fellowship (CIFellow)**, *Computing Community Consortium and Computing Research Association, and National Science Foundation*, USA, \$267,500.
- 2010 **Student Author Travel Award**, *User Modeling, Adaptation, and Personalization Conference 2010 in Hawaii*, Big Island, HI, \$1,475.
“Can concept-based user modeling improve adaptive visualization?”
- 2009 **Internship Training for Computer Science Students**, *Telefónica R&D*, Barcelona, Spain, €9,218.
- 2008 **Student Author Travel Award**, *17th International World Wide Web Conference*, Beijing, China, \$700.
“Personalized web exploration with task models”
- 2007 **Student Author Travel Award**, *16th International World Wide Web Conference*, Banff, Canada, \$500.
“Open user profiles for adaptive news systems: help or harm?”
- 2006 **Honorable mention**, *iFest 2006 Ph.D. Poster Track School of Information Sciences*, University of Pittsburgh, Pittsburgh, PA.
“YourNews: A Personalized News Filtering System”

- 2005 **First Prize, *iFest 2005 Demo Track***, University of Pittsburgh, Pittsburgh, PA.
“Implementation of Social Search with Educational Resources”

Teaching Experiences

- 2011 **CMSC 734: Information Visualization**, *University of Maryland*, College Park, MD, Class Project Mentor.
“Visual Analysis of Temporal Trends in Social Networks using Edge Color Coding and Metric Timelines”
- 2010 **INFSCI 2955: Special Topics: The Social Web**, *University of Pittsburgh*, Pittsburgh, PA, Guest Lecturer.
“Document Filtering and Classification, and RSS Feed Parsing for Social Network Services”
- 2009 **INFSCI 2955: Special Topics: Adaptive Web Systems**, *University of Pittsburgh*, Pittsburgh, PA, Guest Lecturer.
“Document modeling, Content-based adaptation, and Adaptive News Access”
- 2001 **LIS3701: Database Systems**, *Yonsei University*, Seoul, Korea, Guest Lecturer.
“Client-server Based Database Systems”
- 2000–2002 **Information Retrieval Systems Lab for LIS Graduate School Students**, *Yonsei University*, Seoul, Korea, Lecturer.
- Designed a course to teach LIS graduate students basic IR theory and techniques for their research projects.
 - Topics: “Implementation of IR systems using Python,” “Conducting IR Experiments using SMART”
- 1999 **Web-based Information Systems for LIS Students**, *Yonsei University*, Seoul, Korea, Lecturer.
- Designed a course to teach LIS undergraduate students Web technologies
 - Topics: “HTML, CGI, and JavaScript”
- 1998 **Web-based Information Systems**, *Yonsei Extension*, Seoul, Korea, Lecturer.
- “Internet Expert Course program at the Yonsei University Extension”
 - Designed a course to teach Web-based internet technologies

Services

- 2012 **Program Committee**, *2012 ASE/IEEE International Conference on Social Informatics*.
- 2010 **Program Committee**, *The Fourth Workshop on Human-Computer Interaction and Information Retrieval (HCIR)*.
- 2004–2011 **Reviewer**, *Advanced Visual Interfaces (AVI '12)*, *EuroVis '12*, *ACM Hypertext conference (HT '11)*, *IEEE InfoVis conference (InfoVis '11)*, *iConference (2011)*, *ACM SIGCHI conference (CHI '11)*, *ACM SIGIR conference (SIGIR '10)*, *ACM Recommender System conference (RecSys '10)*, *Journal of Universal Computer Science*, *Conference on Information and Knowledge Management (CIKM '08, '09)*, *Advanced Visual Interfaces International Working Conference (AVI '08)*, *International Conference on World Wide Web (WWW '07, '08)*, *European Conference on Technology Enhanced Learning (ECTEL '06)*, *IEEE/WIC/ACM International Conference on Web Intelligence (WI '05, '06)*, .

Publications

Journal Papers

- [1] J. Ahn, and P. Brusilovsky. Adaptive Visualization for Exploratory Information Retrieval. Submitted to *Information Processing and Management (IP&M) Special Issue on the Human-Computer Interaction and Information Retrieval*.
- [2] J. Ahn, P. Brusilovsky, J. Grady, D. He, and R. Florian. Semantic annotation based exploratory search for information analysts. *Information Processing and Management (IP&M)*, 46(4):383–402, July 2010.
- [3] P. Brusilovsky, J. Ahn, and E. Rasmussen. Teaching information retrieval with web-based interactive visualization. *Journal of Education in Library and Information Science (JELIS)*, 51(3):187–200, 2010.
- [4] J. Ahn and P. Brusilovsky. Adaptive visualization of search results: Bringing user models to visual analytics. *Information Visualization (IVS)*, 8(3):167–179, 2009.
- [5] D. He, P. Brusilovsky, J. Ahn, J. Grady, R. Farzan, Y. Peng, Y. Yang, and M. Rogati. An evaluation of adaptive filtering in the context of realistic task-based information exploration. *Information Processing and Management (IP&M)*, 44(2):511–533, March 2008.
- [6] J. Ahn, R. Farzan, and P. Brusilovsky. Social search in the context of social navigation. *Journal of the Korean Society for Information Management (in English)*, 23(2):147–165, 2006.

Journal Papers in Preparation

- [1] J. Ahn, C. Plaisant, and B. Shneiderman. A Task Taxonomy of Network Evolution Analysis. Planned to submit to *IEEE Transactions on Visualization and Computer Graphics (TVCG)* in February 2012.
- [2] J. Ahn, and P. Brusilovsky. Semantic Entity Visualization for Adaptive Information Access. *Journal of the American Society for Information Science and Technology (JASIST)*.

Book Chapters

- [1] D. He., P. Brusilovsky, J. Grady, J. Ahn, Y. Yang, M. Rogati. EDIE: An Evaluation Dataset for Task-Based Information Exploration. *Achievements in DARPA GALE Program*. In Press.

Refereed Conference Papers

- [1] J. Ahn, M. Taieb-Maimon, S. Sopian, C. Plaisant, and B. Shneiderman. Temporal Visualization of Social Network Dynamics: Prototypes for Nation of Neighbors. In *Proceedings of the 2011 International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP'11)*, pages 309–316, College Park, MD, USA, 2011.
- [2] U. Khurana, V. Nguyen, H. Cheng, J. Ahn, X. Chen, B. Shneiderman. Visual Analysis of Temporal Trends in Social Networks using Edge Color Coding and Metric Timelines. *The Third IEEE International Conference on Social Computing (SocialCom 2011)*.
- [3] J. Ahn and P. Brusilovsky. Can concept-based user modeling improve adaptive visualization? In *18th International Conference on User Modeling, Adaptation, and Personalization (UMAP 2010)*, pages 4–15, Big Island, HI, USA, 2010. (acceptance rate 23%)
- [4] J. Ahn and X. Amatriain. Towards fully distributed and privacy-preserving recommendations via expert collaborative filtering and restful linked data. In *Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence*, Toronto, Canada, 2010. (acceptance rate 16.6%)
- [5] Y. Lin, J. Ahn, P. Brusilovsky, D. He, and R. Will. Exploratory search of museum archives with named entity-based faceted browsing. In *Proceedings of ASIS&T 2010 Annual Meeting*, Pittsburgh, PA, USA, 2010. (acceptance rate 29.7%)

- [6] J. Ahn, P. Brusilovsky, D. He, J. Grady, and Q. Li. Personalized web exploration with task models. In *WWW '08: Proceeding of the 17th international conference on World Wide Web*, pages 1–10, Beijing, China, 2008. (acceptance rate 15%)
- [7] J. Ahn, P. Brusilovsky, J. Grady, D. He, and S. Y. Syn. Open user profiles for adaptive news systems: help or harm? In *WWW '07: Proceedings of the 16th international conference on World Wide Web*, pages 11–20, Banff, Canada, 2007. (acceptance rate <12%)
- [8] J. Ahn and P. Brusilovsky. From user query to user model and back: Adaptive relevance-based visualization for information foraging. In *Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence*, pages 706–712, Silicon Valley, CA, USA, 2007. (acceptance rate 16%)
- [9] D. He, P. Brusilovsky, J. Grady, Q. Li, and J. Ahn. How Up-to-date should it be? the Value of Instant Profiling and Adaptation in Information Filtering. In *Proceedings of the IEEE/WIC/ACM International Conference on Web Intelligence*, pages 699–705. IEEE Computer Society, 2007.
- [10] J. Ahn, P. Brusilovsky, and S. Sosnovsky. QuizVIBE: Accessing educational objects with adaptive relevance-based visualization. In T. Reeves and S. Yamashita, editors, *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2006*, pages 2707–2714, Honolulu, Hawaii, USA, October 2006. AACE.
- [11] P. Brusilovsky, J. Ahn, T. Dumitriu, and M. Yudelson. Adaptive knowledge-based visualization for accessing educational examples. In *Tenth International Conference on Information Visualisation (IV'06)*, pages 142-150, London, England, July 2006.
- [12] P. Brusilovsky, R. Farzan, and J. Ahn. Comprehensive personalized information access in an educational digital library. In *Proceedings of the 5th ACM/IEEE-CS Joint Conference on Digital Libraries*, pages 9–18, Denver, CO, USA, 2005. (acceptance rate 31%)

Non-refereed Conference Papers

- [1] D. He and J. Ahn. Pitt at CLEF '05: Data fusion for spoken document retrieval. In *CLEF*, pages 773–782, 2005.
- [2] D. He and J. Ahn. Pitt at TREC '05: Hard and enterprise. In *TREC*, 2005.

Refereed Workshop Papers

- [1] J. Ahn, K. Wongsuphasawat, and P. Brusilovsky. Analyzing User Behavior Patterns in Adaptive Exploratory Search Systems with LifeFlow. In *Fifth Workshop on Human-Computer Interaction and Information Retrieval (HCIR 2011)*, Mountain View, CA, USA, Oct 2011.
- [2] J. Ahn and P. Brusilovsky. Visual interaction for personalized information retrieval. In *Third Workshop on Human-Computer Interaction and Information Retrieval (HCIR 2009)*, Washington, DC, USA, Oct 2009.
- [3] S. Koshman and J. Ahn. Adapting an information visualization tool for mobile information retrieval. In *Third Workshop on Human-Computer Interaction and Information Retrieval (HCIR 2009)*, Washington, DC, USA, Oct 2009.
- [4] J. Ahn and P. Brusilovsky. Mediating between User Query and User Model with Adaptive Relevance-Based Visualization. In *The First Workshop on Human-Computer Interaction and Information Retrieval (HCIR 2007)*, Boston, MA, USA, Oct 2007.
- [5] P. Brusilovsky, J. Ahn, and R. Farzan. Accessing educational digital libraries through adaptive information visualization. In *Proceedings of 10th DELOS Workshop on Personalized Access, Profile Management, and Context Awareness in Digital Libraries, PersDL 2007*, Confu, Greece, June 29-30 2007.
- [6] J. Ahn, P. Brusilovsky, and R. Farzan. Investigating users' needs and behavior for social search. In *Proceedings of the Workshop on new Technologies for Personalized Information Access, part of the 10th International Conference on User Modeling (UM'05)*, pages 1–12, Edinburgh, July 24-25 2005.

- [7] J. Ahn, R. Farzan, and P. Brusilovsky. A two-level adaptive visualization for information access to open- corpus educational resources. In *Proceedings of Workshop on the Social Navigation and Community-Based Adaptation Technologies at the 4th International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems*, pages 497–505, Dublin, Ireland, June 20th 2006.
- [8] P. Brusilovsky, R. Farzan, and J. Ahn. Layered evaluation of adaptive search. In *Proceedings of Workshop on Evaluating Exploratory Search Systems at the 29th Annual International ACM SIGIR Conference on Research & Development on Information Retrieval*, pages 11–13, Seattle, WA, 2006.

Talks and Presentations

- 2011 **Analyzing User Behavior Patterns in Adaptive Exploratory Search Systems with LifeFlow**, a poster presentation at *The Fifth Workshop on Human-Computer Interaction and Information Retrieval, HCIR 2011*, Mountain View, CA, October 2011.
- 2011 **Visualizing the Temporal Evolution of Networks**, a talk at the *HCIL Symposium*, College Park, MD, May 2011.
- 2011 **Nation of Neighbors: Design and Network Evolution for Internet Community Safety Systems**, a joint talk with Dr. Ben Shneiderman at the *Technology-Mediated Social Participation: An Interdisciplinary Lecture Series*, College Park, MD, February 2011.
- 2011 **Exploratory user interfaces for personalized information access**, a talk at the *CLIP (Computational Linguistics & Information Processing) Lab Colloquia of the University of Maryland at College Park*, College Park, MD, February 2011.
- 2011 **Guiding educational resources for iSchool students with topic-based adaptive visualization**, a poster presentation at *iConference 2011*, Seattle, WA, February 2011.
- 2010 **Exploratory search of museum archives with named entity-based faceted browsing**, a talk at *ASIS&T 2010 Annual Meeting*, Pittsburgh, PA, October 2010.
- 2010 **Can Concept-based User Modeling Improve Adaptive Visualization?**, a talk at *The User Modeling, Adaptation, and Personalization (UMAP 2010) conference*, Hawaii, USA, June 2010.
- 2010 **What You See Is What You Search: Adaptive Visual Search Framework for the Web**, a poster presentation at *The 19th international conference on World Wide Web, WWW '10*, Raleigh, NC, USA, April 2010.
- 2009 **Visual Interaction for Personalized Information Retrieval**, a poster presentation at *The Third Workshop on Human-Computer Interaction and Information Retrieval, HCIR 2009*, Washington DC, USA, October 2010.
- 2008 **Envisioning User Models for Adaptive Visualization**, a poster presentation at *The IEEE Symposium on Visual Analytics Science and Technology, VAST '08*, Columbus, Ohio, USA, October 2008.
- 2008 **Personalized Web Exploration with Task Models**, a talk at *The 17th International Conference on World Wide Web, WWW '08*, Beijing, China, April 2008.
- 2007 **Open user profiles for adaptive news systems: help or harm?**, a talk at *The 16th International Conference on World Wide Web, WWW '07*, Banff, Canada, April 2007.

- 2006 **Layered Evaluation of Adaptive Search**, a talk at *The Workshop on Evaluating Exploratory Search Systems at the 29th Annual International ACM SIGIR Conference on Research & Development on Information Retrieval*, Seattle, WA, USA, June 2006.
- 2005 **Comprehensive personalized information access in an educational digital library**, a talk at *The 5th ACM/IEEE-CS Joint Conference on Digital Libraries, JCDL '05*, Denver, Colorado, USA, June 2005.

Technical skills

Programming Languages	C, Python, Perl, Java	Information Retrieval	Indri/Lemur, Lucene, SMART
Web Technologies	JavaScript, AJAX, JQuery, Action-Script/Flex/AIR, PHP	Statistical Scripting	R, SPSS, Matlab
Databases	SQL, Berkeley DB		