



Design Lab Fellow and Postdoctoral Researcher

University of California San Diego
Department of Cognitive Science and Design Lab
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RESEARCH INTERESTS

Computer-Supported Cooperative Work (CSCW), Information Visualization, Human-Computer Interaction (HCI), User Interface Design, Visual Analytics (VA), Social Computing, Crowdsourcing, Public Engagement, Large Interactive Surfaces, and Computational Aesthetics.

EDUCATION

- 2008-2014 **PhD in Computer Science**, University of Victoria, Victoria, BC.
Advisor: Dr. Melanie Tory
Dissertation: *Supporting Sensemaking during Collaborative Visual Analytics*
- 2006-2008 **Master of Information Technology**, University of Malaya, KL, Malaysia.
Advisor: Dr. Wai (Albert) Yeap
Thesis: Implementation of Creative-pad: A New Creativity Support Tool
- 1993-1998 **Bachelor of Electrical Engineering**, Tehran Azad University, Tehran, Iran.

RESEARCH EXPERIENCE

- 2016-presnt **Design Lab Fellow and Postdoctoral Researcher**, UCSD, San Diego, CA.
Working at the confluence of social computing and design with the goal of augmenting groups' ability to solve complex problems. Particularly, I am exploring new strategies for engaging citizens in massive decision-making processes related to civic issues. I am interested in extending current crowd-civic systems by designing and developing sensemaking technologies. These new technologies will empower citizens and other stakeholders to understand different viewpoints, identify disagreements, and co-create alternative and innovative solutions.
- 2014-2016 **Postdoctoral Fellow**, University of British Columbia, Vancouver, BC, Canada. I worked on two projects:
- Multi-Display Tabletop for Public Engagement in Urban Design*: Investigated use of novel visualization and collaborative technologies to make data more accessible, understandable and useful to enhance public engagement in community design and empower them to make well-informed data-driven and evidence-based decisions.
- Interactive Technology for Collaborative Building Design*: Investigated how building professionals interact with digital information and with each other when using multi-touch screens, digital tables, and multi-display environments. Characterized interactions with digital (2D, and 3D) and physical artifacts during design coordination meetings through analysis of an ethnographic study.

- 2008-2014 **Research Assistant**, University of Victoria, Victoria, BC, Canada.
Industrial sponsor: SAP Business Objects
- Designed and developed visualization tools and interaction techniques to facilitate collaborative visual analysis and collaborative sensemaking (CoSpaces and CLIP). I also designed and conducted several observational studies to understand collaborative behaviour and to examine the effects of my prototypes on collaboration patterns and the sensemaking process.
- My doctoral research contributed an understanding of how analysts use collaborative visual analytics tools during collocated collaboration and the important role of note taking during this process.
- Through a series of observational user studies, I investigated how we can better provide support for recording and sharing analytical results. I designed and evaluated several mechanisms to increase awareness among team members. I also contributed a new technique to automatically discover and link collaborators' common work and examined how the technique can be employed to facilitate collocated collaborative sensemaking activities in visual analytics.
- Summer 2009 **Research Intern**, SAP, Vancouver, BC, Canada.
Observed and interviewed business data analysts in action to acquire better knowledge of collaborative work dynamics and requirements in the business intelligence domain.
- 2006-2008 **Research Assistant**, University of Malaya, KL, Malaysia.
Designed and developed a creativity support tool to assist creative directors in an advertising agency to come up with new ideas.

PUBLICATIONS

Acceptance rates listed when they are known.

Refereed Journal Articles

- 2017 **Narges Mahyar**, Kellogg S. Booth, Cynthia Girling, and Ronald Kellett, "The Long Road to Effective Cross-Display Interaction", *Journal of Personal and Ubiquitous Computing*, 10 pages, 2017, (*in preparation*).
- 2016 Ali Sarvghad, Melanie Tory, and **Narges Mahyar**, "Visualizing Dimension Coverage to Support Exploratory Analysis", *IEEE Transactions on Visualization and Computer Graphics*, 10 pages, 2016.
- 2014 **Narges Mahyar** and Melanie Tory, "Supporting Communication and Coordination in Collaborative Sensemaking", *IEEE Transactions on Visualization and Computer Graphics*, pp. 1633-1642, Oct. 2014. [Acceptance Rate: 22.6%] **[Best Paper Award, VAST 2014]**
- 2012 **Narges Mahyar**, Ali Sarvghad, and Melanie Tory, "Note Taking in Co-located Collaborative Visual Analytics: Analysis of an Observational Study", *Information Visualization*, vol. 11, no. 3, pp. 190-204, July 2012.

Refereed Conference Papers

- 2016 **Narges Mahyar**, Kelly Burke, Siyi Meng, Jialiang Xiang, Kellogg S. Booth, Cynthia Girling, and Ronald Kellett, “UD Co-Spaces: A Table-Centred Multi-Display Environment for Public Engagement in Urban Design Charrettes”, *Interactive Surfaces and Spaces (ISS '16)*, November 6-9, ACM, pp. 109-118. **[Honourable Mention Award]**
- 2015 Sarmad Mehrbod, Sheryl Staub-French, Melanie Tory, and **Narges Mahyar**, “A Framework for Classifying BIM Design Coordination Issues”, *Construction Specialty Conference*, Vancouver, British Columbia, June 8-10, 10 pages, 2015.
- 2013 **Narges Mahyar**, Ali Sarvghad, Melanie Tory, and Tyler Weeres, “Observations of Record-Keeping in Co-located Collaborative Analysis”, *HICSS 2013*, pp. 460-469, Jan. 2013.
- 2010 **Narges Mahyar**, Ali Sarvghad, and Melanie Tory, “A Closer Look at Note Taking in the Co-located Collaborative Visual Analytics Process,” *IEEE Visual Analytics Science and Technology (VAST'10)*, pp. 171-178, 2010. [Acceptance Rate: 28%]. **[Selected for publication in the "Information Visualization" journal]**
- 2010 Wai K. Yeap, Tommi Opas, and **Narges Mahyar**, “On Two Desiderata for Creativity Support Tools”, *Conference on Computational Creativity*, pp. 180-189, 2010.

Refereed Workshop Papers

- 2017 **Narges Mahyar**, Weichen Liu, Dangyi Liu, Steven P. Dow, Enabling Crowdsourced Visualizations to Support Large-Scale Civic Engagement, *Workshop on Crowd-Civic Systems, CSCW 2017*, 5 pages, 2017 (*in press*).
- 2015 **Narges Mahyar**, Sung-Hee Kim, and Bum Chul Kwon, “Towards a Taxonomy for Evaluating User Engagement in Information Visualization“, *Workshop on Personal Visualization: Exploring Everyday Life, IEEE VIS 2015*, 4 pages, 2015.
- 2015 Ronald Kellett, Kellogg Booth, **Narges Mahyar**, “Collaboration Technology for Stakeholder Engagement in Urban Planning”, *Information Technology and City Life Workshop, CSCW 2015*, March 14-16, 2 pages, 2015.
- 2011 **Narges Mahyar**, Ali Sarvghad, Melanie Tory and Tyler Weeres “CoSpaces: Workspaces to Support Co-located Collaborative Visual Analytics,” *DEXIS 2011*, 4 pages, Nov 2011.
- 2009 **Narges Mahyar**, Ali Sarvghad, and Melanie Tory, “Roles of Notes in Co-located Collaborative Visualization”, *Workshop on Collaborative Visualization on Interactive Surfaces (CoVis 2009)*, 4 pages, Oct. 2009.
- 2009 Ali Sarvghad, **Narges Mahyar**, and Melanie Tory, “History Tools for Collaborative Visualization,” *Workshop on Collaborative Visualization on Interactive Surfaces (CoVis 2009)*, 4 pages, Oct. 2009.

Other Publications

- 2017 Cynthia Girling, Kellogg S. Booth, **Narges Mahyar**, Ronald Kellett, and Kelly Burke, “Fast and Early Feedback: Collaboration Tools to Support Informed Public Engagement”, *Council of Educators in Landscape Architecture Conference*, abstract May 2017, 4 pages (*in submission*).
- 2017 **Narges Mahyar**, Weichen Liu, Sijia Xiao, Jacob T. Browne, Ming Yang, Steven P. Dow, “ConsensusUs: Visualizing Points of Disagreement for Multi-Criteria Collaborative Decision Making”, *CSCW 2017*, 4 pages, 2017 (*in press*).
- 2016 Michael Sedlmair, Petra Isenberg, Tobias Isenberg, **Narges Mahyar**, and Heidi Lam, Proceedings of the Sixth Workshop on "Beyond Time and Errors: Novel Evaluation Methods for Visualization" (BELIV 2016, October 24, Baltimore, Maryland, USA), October 2016.
- 2016 **Narges Mahyar**, Kellogg S. Booth, Cynthia Girling, and Ronald Kellett, “Just Scratching the Surface, the Long Road to Effective Cross-Display Interaction”, *Cross-Surface '16 workshop*, in conjunction with ACM ISS'16, 7 pages, 2016.
- 2016 **Narges Mahyar**, Siyi Meng, Jialiang Xiang, Kellogg S. Booth, Cynthia Girling, and Ronald Kellett, “A Multi-Display Environment for Community Planning”, *Graphics Interface*, 2 pages, 2016. [**Best Poster Honourable Mention**]
- 2014 **Narges Mahyar**, and Melanie Tory, “CLIP: A Visual Thinking Space to Support Collaborative Sensemaking and Reasoning”, *Graphics, Animation and New Media (GRAND) NCE AGM*, 4 pages, 2014. [**Best Research Note Honourable Mention**]
- 2011 **Narges Mahyar**, “Supporting Note Taking in Co-located Collaborative Visual Analytics on Large Interactive Surfaces”, Part of the Doctoral Colloquium, *ITS '11 Proceedings of the ACM International Conference on Interactive Tabletops and Surfaces*, 4 pages, Nov 2011. [Acceptance Rate: 33.9%]

AWARDS

- 2016 **Honourable Mention Award**, *Interactive Surfaces and Spaces (ISS)*, 2016
- 2016 **Best Poster Honourable Mention**, *Graphics Interface (GI)*, 2016
- 2014 **Best Paper Award**, *IEEE Visual Analytics Science and Technology (VAST)* 2014
- 2014 **Best Research Note Honourable Mention**, *Graphics, Animation and New Media (GRAND)*, 2014
- 2011 **Women in Development Scholarship**, University of Victoria
- 2008-2012 **SAP ARC North America Fellowships** (Multi-touch interfaces), University of Victoria (\$105,000)
- 2007 **Institute of Research Management and Consultancy Award**, University of Malaya

TEACHING EXPERIENCE

Guest Lecturer

- Spring 2016 **Graduate Research Colloquium (IAT 805)**, School of Arts and Interactive Technology, Simon Fraser University
- Summer 2014 **Human-Computer Interaction (SENG 310)**, University of Victoria
- Spring 2014 **Advanced Methods for Human-Computer Interaction (CSC 578C)**, University of Victoria
- Summer 2013 **Human-Computer Interaction (SENG 310)**, University of Victoria
- Fall 2008 **Object-Oriented Software Development (SENG 330)**, University of Victoria

Teaching Assistant

- Spring 2014 **Human-Computer Interaction (SENG 310)**, University of Victoria (UVic)
- Spring 2014 **Advanced Methods for Human-Computer Interaction (CSC 578C)**, UVic
- Summer 2013 **Human-Computer Interaction (SENG 310)**, University of Victoria
- Fall 2013 **Research Skills (CSC 595)**, University of Victoria
- Fall 2012 **Software Development Methods (SENG 265)**, University of Victoria
- Fall 2012 **Fundamentals of Programming (CSC 110)**, University of Victoria
- Spring 2012 **Computers and Information Processing (CSC 105)**, University of Victoria
- Spring 2011 **Elementary Computing (CSC 100)**, University of Victoria
- Fall 2011 **Elementary Computing (CSC 100)**, University of Victoria
- Spring 2009 **Human-Computer Interaction (SENG 310)**, University of Victoria

Consultant & Teaching Assistant Administrator

- Summer 2011 & Spring 2013 **Consultant:** As consultant, I helped undergraduate students with Java, C and HTML assignments.
- Fall 2012 **Fundamentals of Programming (CSC 110)**, University of Victoria
Acted as TA admin to assist instructors to design assignments, marking schemes and coordinated the markers.

SUPERVISION AND MENTORSHIP

- Fall 2016-present Mentoring undergrad and grad students, University of California San Diego.
- **Joanne Cho**, BSc., Cognitive Science
- **Tim Banh**, BSc., Cognitive Science
- **Lauren Liu**, BSc., Cognitive Science
- **Alejandro Panduro**, BSc., Cognitive Science
- **David Luu**, BSc., Computer Engineering
- **Weichen Liu**, MSc. Computer Science
- **Dangyi Liu**, MSc. Cognitive Science
- Summer 2016 Mentoring a PhD student, University of British Columbia.
-**Kelly J. Burke**, PhD, iSchool
- 2014-2016 Co-supervising a PhD candidate, University of British Columbia.

- Summer 2015

-**Sarmad Mehrbod**, PhD, Civil Engineering
 Co-supervised 4 undergraduate students, University of British Columbia.
 -**Siyi (Cathy) Meng**, BSc., Computer Science
 -**Jialiang Xiang**, BSc., Computer Science
 -**Austin Liu**, BSc., Computer Science
 -**Yunpiao (Withney) Bai**, BSc., Computer Science
- Fall 2013

Mentored and instructed two graduate students who participated in the qualitative evaluation of CLIP study, University of Victoria.
 -**Leandro Collares**, MSc., Computer Science
 -**Wanda Boyer**, MSc., Computer Science
- Fall 2012

Co-supervised an undergrad co-op student who implemented backbone components for CLIP. University of Victoria.
 -**Anthony Bashi**, BSc., Computer Science
- Spring & Summer 2010

Co-supervised an undergrad co-op software developer who participated in the development of CoSpaces. I also supervised him for a short project that investigated integration of aesthetics into a GUI. University of Victoria.
 -**Tyler Weeres**, BSc., Computer Science

INDUSTRY EXPERIENCE

- 2004 - 2005

Leader of the E-banking team, Leader of E-payment Research Group, ITC, Tehran, Iran.
 Researched and proposed solutions to implement E-banking and E-payment services over the national network.
- 2003 - 2004

IT Expert, Member of IT Services Research Group, ITC, Tehran, Iran.
 Researched technologies to transmit video using ITC infrastructure. Contributed to successful implementation of a Video on Demand service.
- 2002 - 2003

Network Management Analyst, ITC, Tehran, Iran.
 Researched hardware/software solutions to improve network performance.
- 2000 - 2002

Network Infrastructure Designer, Member of Network Research Group, ITC, Tehran, Iran.
 Redesigned network hardware and software for all of Iran's major provinces to support increased network traffic (from 250,000 to 43 million users).

PROFESSIONAL ACTIVITIES

Program Committee Member

- 2017 Creativity and Cognition Conference, 2017
- 2016 Interactive Surfaces and Spaces (ISS 16)
- 2016 Graphics Interface (GI) 2016
- 2015 DEXIS 2015, Workshop on Data Exploration for Interactive Surfaces, in conjunction with Interactive Tabletops and Surfaces (ITS 2015)
- 2015-2016 Steering Committee, HCI@UBC, Monthly Seminar Series

Organizing Committee

- 2016 BELIV 2016 (Beyond Time and Errors: Novel Evaluation Methods for Visualization), in conjunction with IEEE VIS 2016
- 2009 SAP Workshop, one day workshop at SAP to collectively brainstorm design ideas for a collaborative visual analytics tool (CoSpaces) with a large group of designers, developers and project managers.

Reviewer

- 2016 ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) 2016
- 2015 Visualization Viewpoint
- 2015 IEEE Information Visualization Journal (*InfoVis*) 2015
- 2015-17 ACM Human Factors in Computing Systems (*CHI*)
- 2014-15 IEEE Computer Graphics and Applications Journal
- 2014-16 IEEE Visual Analytics Science and Technology (*VAST*)
- 2014 EuroVis (Eurographics/ IEEE VGTC Symposium on Visualization) 2015
- 2014 Graphics, Animation and New Media (*GRAND*)

PROFESSIONAL DEVELOPMENT

- 2015 **HCI Curriculum Renewal Workshop**, one day workshop, organized by Prof. Regan Mandryk and Prof. Derek Reilly. We brainstormed a list of modules for both undergraduate and graduate level HCI courses and worked in groups to create several of the modules. June 2, 2015, Dalhousie University, Halifax, NS.
- 2015 **HCI Sub-Specialization Workshop**, half day workshop, organized by Prof. Kellogg Booth. We reviewed the HCI sub-specialization master's level program at UBC and made recommendations for its future. May 8, 2015, University of British Columbia, Vancouver, BC.
- 2015 **Effective Supervision**, one day workshop, Postdoctoral Fellows Office (PDFO), University of British Columbia, Vancouver, BC.
- 2015 **Succeeding in Difficult Conversations**, one day workshop, PDFO, University of British Columbia, Vancouver, BC.
- 2014 **CANVAS** (Canadian Visual Analytics School), one week summer school, University of British Columbia, Vancouver, BC.
- 2014 **Pathway to Success**, 2 days workshop for learning to transition from grad school to a career, University of Victoria, Victoria, BC.
- 2013 **TA Workshops**, A series of workshops to improve TA skills, University of Victoria, Victoria, BC.
- 2010 **TEDxVictoria**, TEDWoman, University of Victoria, Victoria, BC. Helped Women in Engineering and Computer Science with local arrangement.

2008 **Academic Writing and Presentation**, one day workshop, University of Victoria, Victoria, BC.

INVITED TALKS AND CONFERENCE PRESENTATIONS

Invited Talks

- 2017 **Collaboratory for Downtown Innovation (CDI)**, San Diego, CA
Enabling Crowdsourced Visualizations to Support Large-Scale Civic Engagement
- 2016 **Autodesk Research**, Toronto, ON
Designing Collaborative Visual Analytics Tools: From Supporting Experts to Engaging the Public
- 2016 **York University**
Designing Collaborative Visual Analytics Tools: From Supporting Experts to Engaging the Public
- 2016 **School of Arts and Interactive Technology**, Simon Fraser University
Large Interactive Surfaces for Collaboratively Exploring & Driving Meaning from Complex Data
- 2016 **Microsoft Research**, Redmond
Designing Collaborative Visual Analytics Tools: From Supporting Experts to Engaging the Public
- 2016 **University Washington Bothell**
From Desktops to Tabletops: Opportunities & Challenges
- 2016 **Boston University**
Technology for Design: A Road Map
- 2014 **University of British Columbia**
Supporting Team Communication and Coordination in Visual Analytics

Conference Presentations

2009-present Presented research papers at ISS 2016, CSCW 2015, IEEE VIS 2015, IEEE VIS 2014, GRAND 2014, HICSS 2013, ITS 2011, and IEEE VIS 2009.

COMMUNITY INVOLVEMENT

- 2015-2016 **Member of Women in Computer Science (FOWCS)**, University of British Columbia, BC, Canada.
Developing HCI related curriculum for grade 10-12.
- Summer 2015 **Volunteer**, University of British Columbia, BC, Canada.
Helping out Computer Science Department with Girls Learning Code (9-13 years) to host two summer camps. Coordinated and demoed our application 4 times during June and August.
- 2008-2014 **Volunteer**, University of Victoria, Victoria, BC, Canada.
Organized many events including department of computer science first Big Data Pechakucha (IdeaFest 2013), and winter social events.
- 2008-2011 **Teacher and Member of the Executive Committee of Internet Course for Seniors**, University of Victoria, Computer Science Volunteer Program.
Taught basic skills for navigating the Internet and using email.

- 2008-2011 **Member of Women in Engineering and Computer Science**, University of Victoria
- 2001-2005 **Co-chair, Women in development extra curriculum activities**, ITC, Tehran, Iran, Organized women in development extra curriculum fine arts, and sport activities.
- 1999-2000 **Founder of Creative Fine Arts Department**, Creative Children's Institute, Isfahan, Iran. Developed curriculum for a series of classes, managed a team of 4 instructors and taught creative fine arts to 5-12 year old children.
- 1998-2000 **Co-founder of Creative Children's Institute**, Isfahan, Iran. Head of Technology Department, provided materials and taught introduction to electronics to 5-12 years old children.
- 1996-1998 **Fine Arts Instructor**, Azad University, Tehran, Iran. Taught fine arts principles to undergrad engineering students.

FINE ARTS BACKGROUND AND EDUCATION

- 2000-2004 Studied Modern Art Principles, Techniques and History, Gholamhossein Nami's Art Academy, Tehran, Iran.
- 1998-2000 Studied Modern Art Principles and Techniques, Mahmood Samandaryan's Art Academy, Tehran, Iran.
- 1994-1998 Studied Watercolor Painting, Atashzad Academy of Art, Mohammad Reza Atashzad, Tehran, Iran.
- 1991-1994 Studied Drawing and Painting Principles, Mojgan Mousapour, Isfahan, Iran.

FINE ARTS EXHIBITIONS

- 2010 Engineering's got talent, University of Victoria, Victoria, Canada.
- 2010 Group exhibition in Cost Collective Gallery (Abstraction), Victoria, Canada.
- 2005 Individual exhibition in Museum of Contemporary Art of Isfahan, Iran.
- 2004 Group exhibition in Atashzad Art Gallery, Tehran, Iran.
- 2004 Group exhibition in University of 'Sanate Ab va Bargh' Tehran, Iran.
- 2003 Group exhibition in Atashzad Art Gallery, Tehran, Iran.
- 2002 Group exhibition in Atashzad Art Gallery, Tehran, Iran.
- 2002 Individual exhibition in Daryabeygi Gallery, Tehran, Iran.
- 2001 Group exhibition in Haft Peykar Gallery, Tehran, Iran.
- 2000 Group exhibition in Kosar Gallery, Isfahan, Iran.
- 1996 Group exhibition, engineering students, Tehran, Iran.

REFERENCES

Dr. Kellogg S. Booth (Postdoctoral Co-Advisor)

Professor, Department of Computer Science
University of British Columbia

Email: ksbooth@cs.ubc.ca

Dr. Jeffrey Michael Heer (PhD External Examiner)

Associate Professor, Computer Science and Engineering
University of Washington

Email: jheer@uw.edu

Prof. Ronald Kellett (Postdoctoral Co-Advisor)

Professor and Director, School of Architecture and Landscape Architecture
University of British Columbia

Email: rkellett@sala.ubc.ca

Dr. Melanie Tory (PhD Advisor)

Research Scientist at Tableau Software
(Formerly: Associate Professor, Department of Computer Science
University of Victoria)

Email: mtory@tableau.com