Arjun Srinivasan

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SUMMARY

I am a member of the Senior Research Staff at Tableau Research in Seattle, WA. My research is at the intersection of Human-Computer Interaction and Information Visualization. Specifically, drawing upon techniques from multimodal (e.g. speech and touch) and mixed-initiative interfaces, I design expressive and intelligent visualization tools for human-data interaction.

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia, USA
- Ph.D. in Computer Science — Aug 2016 – Jul 2020
  Thesis: "Combining Natural Language and Direct Manipulation for Human-Data Interaction through Visualizations"
  Research areas: Human-Computer Interaction, Information Visualization
  Advisor: Dr. John Stasko
- M.S. in Computer Science — Aug 2014 – May 2016
  Specialization: Visual Analytics
  Cumulative GPA: 3.83 / 4.0

R.V. College of Engineering, Bangalore, Karnataka, India
- B.E. in Information Science — Aug 2009 – Jun 2013
  Cumulative GPA: 8.68 / 10.00

EXPERIENCE

Tableau Research, Seattle, Washington, USA

Senior Research Staff — Oct 2020 – Present

Conducting research at the intersection of human-computer interaction and information visualization.

Microsoft Research, Redmond, Washington, USA

Research Intern, Mentor: Dr. Bongshin Lee — May 2019 – Aug 2019

Developed multimodal interfaces for data visualization with the EPIC (Extended Perception, Interaction & Cognition) Research Group.

Adobe Research, Seattle, Washington, USA

Research Intern, Mentor: Dr. Mira Dontcheva — May 2018 – Aug 2018

Explored user interface techniques to enhance discoverability of speech input in multimodal interfaces.

Microsoft Research, Redmond, Washington, USA

Research Intern, Mentor: Dr. Steven Drucker — May 2017 – Aug 2017

Designed and evaluated techniques to facilitate visual comparison in data visualization dashboards.

Salesforce.com, San Francisco, California, USA

Software Engineering Intern, Analytics Cloud — May 2015 – Aug 2015, May 2016 – Aug 2016

Developed a visualization system for real-time monitoring and diagnosis of service queues across data centers in a multi-tenant cloud architecture.

SAP Labs India, Bangalore, Karnataka, India

Associate Developer, SAP HANA Cloud Integration — Jul 2013 – Apr 2014

Worked on R&D of Business Process Integration solutions on the cloud. Focused on developing proof of concept solutions for database refactoring and database migration.

PUBLICATIONS

JOURNAL/ CONFERENCE

A. Srinivasan and V. Setlur. "Snowy: Recommending Utterances for Conversational Visual Analysis." *ACM Symposium on User Interface Software and Technology (UIST)*, 2021.

A. Srinivasan, N. Nyapathy, B. Lee, S.M. Drucker, and J. Stasko. "Collecting and Characterizing Natural Language Utterances for Specifying Data Visualizations." *ACM Conference on Human Factors in Computing Systems (CHI)*, 2021.

A. Narechania*, A. Srinivasan*, and J. Stasko. "NL4DV: A Toolkit for Generating Analytic Specifications for Data Visualization from Natural Language Queries." *IEEE Transactions on Visualization and Computer Graphics*, 2021. *equal contribution.

A. Srinivasan, B. Lee, and J. Stasko. "Interweaving Multimodal Interaction with Flexible Unit Visualizations for Data Exploration." *IEEE Transactions on Visualization and Computer Graphics*, 2020.

A. Srinivasan, B. Lee, N.H. Riche, S.M. Drucker, and K. Hinckley. "InChorus: Designing Consistent Multimodal Interactions for Data Visualization on Tablet Devices." *ACM Conference on Human Factors in Computing Systems (CHI)*, 2020 [**Best Paper Honorable Mention, Top 5%**].

A. Srinivasan, S.M. Drucker, A. Endert, and J. Stasko. "Augmenting Visualizations with Interactive Data Facts to Facilitate Interpretation and Communication." *IEEE Transactions on Visualization and Computer Graphics*, 2019.

A. Srinivasan, M. Dontcheva, E. Adar, and S. Walker. "Discovering Natural Langauge Commands in Multimodal Interfaces." *ACM Conference on Intelligent User Interfaces (IUI)*, 2019.

F. Hohman*, A. Srinivasan*, S.M. Drucker. "TeleGam: Combining Visualization and Verbalization for Interpretable Machine Learning." *IEEE Visualization Conference (VIS) Short Papers*, 2019. *equal contribution.

A. Srinivasan and J. Stasko. "Orko: Facilitating Multimodal Interaction for Visual Exploration and Analysis of Networks." *IEEE Transactions on Visualization and Computer Graphics*, 2018.

A. Srinivasan, H. Park, A. Endert, and R. Basole. "Graphiti: Interactive Specification of Attribute-based Edges for Network Modeling and Visualization." *IEEE Transactions on Visualization and Computer Graphics*, 2018.

A. Srinivasan, M. Brehmer, B. Lee and S.M. Drucker. "What's the Difference?: Evaluating Variants of Multi-Series Bar Charts for Visual Comparison Tasks." *ACM Conference on Human Factors in Computing Systems (CHI)*, 2018.

A. Srinivasan and J. Stasko, "Natural Language Interfaces for Data Analysis with Visualization: Considering What Has and Could Be Asked." *Proceedings of EuroVis (Short Papers)*, 2017.

Y.H. Kim, B. Lee, A. Srinivasan, and E.K. Choe. "Data@Hand: Fostering Visual Exploration of Personal Data on Smartphones Leveraging Speech and Touch Interaction." *ACM Conference on Human Factors in Computing Systems (CHI)*, 2021 [**Best Paper Honorable Mention, Top 5%**].

A. Saktheeswaran, A. Srinivasan, J. Stasko. "Touch? Talk? or Touch and Talk? Investigating Multimodal Interaction for Visual Network Exploration and Analysis." *IEEE Transactions on Visualization and Computer Graphics*, 2020.

M. Agarwal, A. Srinivasan, J. Stasko. "VisWall: Visual Data Exploration Using Direct Combination on Large Touch Displays." *IEEE Visualization Conference (VIS) Short Papers*, 2019.

B. Lee, A. Srinivasan, J. Stasko, M. Tory, and V. Setlur. "Multimodal Interaction for Data Visualization." *Workshop at the International Conference on Advanced Visual Interfaces (AVI)*, 2018.

J. Thompson, A. Srinivasan, and J. Stasko. "Tangraphe: Interactive Exploration of Network Visualizations using Single Hand, Multi-touch Gestures." *International Conference on Advanced Visual Interfaces (AVI) Short Papers*, 2018.

R. Basole, A. Srinivasan, H. Park, and S. Patel. "ecoxight: Discovery, Exploration and Analysis of Business Ecosystems using Interactive Visualization." *ACM Transactions on Management Information Systems (TMIS)*, 2018

B. Saket, A. Srinivasan, E. Ragan, and A. Endert. "Evaluating Interactive Graphical Encodings for Data Visualization." *IEEE Transactions on Visualization and Computer Graphics*, 2017.

R. Basole, T. Major, and A. Srinivasan "Understanding Alliance Portfolios using Visual Analytics." *ACM Transactions on Management Information Systems, Vol. 8, No. 2, Article 1*, 2017.

BOOKS

B. Lee, A. Srinivasan, P. Isenberg, and J. Stasko. "Post-WIMP Interaction for Information Visualization." *Foundations and Trends® in Human–Computer Interaction*, 2021.

WORKSHOPS

A. Srinivasan, B. Lee, and J. Stasko. "Facilitating Spreadsheet Manipulation on Mobile Devices Leveraging Speech." *Data Visualization on Mobile Devices workshop at ACM CHI*, 2018.

SB. Karthik, A. Srinivasan, N. Elmqvist, and J. Stasko. "Affordances of Input Modalities for Visual Data Exploration in Immersive Environments." *IEEE VIS Workshop on Immersive Analytics*, 2017.

R. Basole, T. Major, and A. Srinivasan. "Sequencing the Enterprise Genome: Interactive Visual Analysis of Multi-Dimensional Alliance Activities of Global Enterprises." *business|vis workshop at IEEE VIS*, 2015.

POSTERS

A. Das, A. Srinivasan, and J. Stasko. "CricVis: Interactive Visual Exploration and Analysis of Cricket Matches." *IEEE VIS*, 2017.

A. Srinivasan, and J. Stasko. "NL4DV: Toolkit for Natural Language Driven Data Visualization." *IEEE VIS*, 2016.

TECHNICAL SKILLS

Programming Languages
Most experienced with: JavaScript, Python, HTML/CSS, Java, SQL
Familiar with: Node.js, R, C#, C++
Dabbled in: C, PHP, Perl, Processing

Libraries/Frameworks
d3.js, numpy, NLTK, scipy, jQuery, Flask, Express

ACHIEVEMENTS / AWARDS

Winner of Georgia Tech's CRIDC Poster Competition.	2020
Georgia Tech College of Computing "Outstanding Graduate Research Assistant" Award.	2018
Winner of Salesforce.com's Analytics Innovation Challenge.	2016
National finalist of Walmart's Collegiate Innovators Challenge.	2014
SAP Global Peer Recognition award.	2013
Winner of SAP Osmosis.	2013
National finalist (1st runner-up) of SAP BizTech India.	2012
Winner of Microsoft India's Windows 8 hackathon.	2012
National finalist of SAP Dashboard Design Challenge India.	2011

ACADEMIC SERVICE	**Organization Committee**
	IEEE VIS Workshop on Exploring Opportunities and Challenges for Natural Language Techniques to Support Visual Analysis 2021
	AVI Workshop on Multimodal Interaction For Data Visualization 2018
	Program Committee
	EuroVis 2022
	ACM International Conference on Multimodal Interaction 2020
	ACM Intelligent User Interfaces Conference (Posters and Demos) 2020
	Workshop on Visualization for AI Explainability (VISxAI) at IEEE VIS 2019-2021
	KDD Workshop on Interactive Data Exploration and Analytics (IDEA) 2018
	Reviewer 2016-Present
	IEEE VIS, ACM CHI, ACM UIST, ACM ISS, EuroVis, MobileHCI, ACM ICMI, ACM IUI, IEEE TVCG, IEEE CG&A, INTERACT
	Awarded Special Recognition for Outstanding Reviews
	ISS 2020, EuroVis 2019, MobileHCI 2019
	Teaching Assistant
	CS7450 Information Visualization Fall 2018
	CS8803 Data Visualization: Principles & Applications Spring 2017

STUDENTS MENTORED	**Arpit Narechania**, Ph.D., CS (Currently at Georgia Tech) Fall 2019 – Spring 2020
	Shrishti AK, Masters, CS (Currently at Georgia Tech) Spring 2020
	Rishab Mitra, Undergraduate, CS (Currently at Georgia Tech) Spring 2020
	Hayeong Song, Ph.D., CS (Currently at Georgia Tech) Fall 2018 – Fall 2019
	Kuhu Gupta, Masters, CS (Currently at Georgia Tech) Fall 2018
	Ayshwarya Saktheeswaran, Masters, HCI (Now at MathWorks) Fall 2017 – Spring 2018
	Ayan Das, Undergraduate + Masters, CS (Now at KPMG) Spring 2017 – Fall 2018
	Hyemin Hwang, Masters, CS (Now at Amazon) Fall 2017 – Summer 2018
	George Wang, Undergraduate, CS (Now at Google) Fall 2017 – Spring 2018
	Mallika Agarwal, Masters, CS (Now at Uber) Fall 2017

LEADERSHIP/ TECHNICAL EVANGELISM	Board Member, India Club at Georgia Tech 2017
	Salesforce.com Campus Brand Ambassador 2016-2017
	Georgia Tech Career Fair Liason 2014
	SAP Student Ambassador (1st student selected globally) 2013-2015
	Member of the Microsoft India App Review Board 2013-2014
	Microsoft Student Partner 2011-2013
	Joint Secretary for the Rotaract Club of RVCE 2011-2012