

EDUCATION

Texas A&M University

Ph.D. in Computer Science

Co-Advisors: Dr. Andruid Kerne and Dr. Ruihong Huang

Thesis: How to Support Situated Design Education through AI-Based Analytics

College Station, USA

Graduation: May 2021

Texas A&M University

M.S. in Computer Science

Advisor: Dr. Andruid Kerne

Thesis: TweetBubble: A Twitter Extension Stimulates Exploratory Browsing

College Station, USA

2011–2014

Delhi Technological University

B.E. in Information Technology

Delhi, India

2003–2007

PROFESSIONAL EXPERIENCE

Centrum Wiskunde & Informatica

Research Intern

Mentors: Dr. Pablo Cesar and Dr. Abdallah El Ali

Gathered needs and evaluated visualizations for sensemaking of sleep data provided to end-users by personal trackers.

Amsterdam, Netherlands

Summer 2018

Adobe Research

Research Intern

Mentor: Dr. Eunye Koh

Investigated interactive visualization of large-scale graph data toward supporting marketers in audience segmentation.

San Jose, USA

Summer 2017

Google

Software Engineer Intern

Mentor: Amos Yoffe

Presented message results in Android *In Apps* Search clustered by topic and time. Launched in September 2016.

Mountain View, USA

Summer 2016

Google Summer of Code

Student Developer

Host Organization: Interface Ecology Lab, Texas A&M University

Created a RESTful service for meta-metadata structured web semantics represented in XML / JSON format.

College Station, USA

Summer 2012

Samsung

Software Engineer and Commercialization Coordinator

Developed, ported, and optimized 2D Graphics module of Java Virtual Machine. Coordinated commercialization of Java platform for mobile, set-top, and blu-ray product lines, spanning teams in India and S. Korea.

Noida, India and Suwon, S. Korea

Jul 2007–Aug 2011

RESEARCH PROJECTS

• Design Analytics

Spring 2017–Present

A human-centered AI investigation for assisting instructors in assessing and providing feedback on a range of visual and conceptual characteristics present within student design work. Engaged co-design methods, such as discussions

and workshops to understand instructors' situated practices and needs. Deployed AI-based analytics via dashboards, as a technology probe, in situated course contexts and established their efficacy through a mixed methods evaluation.

- **TweetBubble** Fall 2013–Fall 2016
A Chrome Extension for Twitter users to follow @usernames, #hashtags associations without tabs or windows. Conducted studies during societal events such as the Academy Awards and Super Bowl. Performed a mixed methods evaluation, including qualitative analysis using grounded theory and quantitative ideation metrics.
- **Event Indicators** Spring 2016–Fall 2016
A weakly supervised approach for extracting and clustering event indicators from Twitter social media. Used the bootstrap technique to acquire a variety of civil unrest event cues, starting from a single strong event indicator.
- **BigSemantics** Fall 2012–Fall 2016
A software architecture for developing meta-metadata semantics powered dynamic exploratory browsing interfaces. Developed new data models, extraction rules, and presentation semantics for social media. Developed a RESTful web service to facilitate semantics-driven application development across a range of contexts.
- **EvolutionWorks** Fall 2011–Spring 2012
A free-form, zoomable space facilitating browsing, collection, and sensemaking of research papers interconnections. Developed interface for presenting papers as cards and algorithm for determining representative terms present within a cluster when the user zooms out. Conducted user studies to compare the interface with tabbed browsers.
- **PhotoNav** Fall 2011–Spring 2012
A wearable computing investigation for assisting pedestrian navigation through the means of photographs. Developed the NavCurator application for the specification of navigation paths over maps. Conducted user studies to compare pedestrian navigation using handheld and head-mounted displays.

MANUSCRIPTS

1. **Jain, A.**, Kerne, A., Lupfer, N., Britain, G., Perrine, A., Choe, Y., Keyser, J., and Huang, R. Integrating Measurement and Presentation of a Visual Design Characteristic to Explain AI-based Analytics. *Submitting to ACM Designing Interactive Systems (DIS) 2021*.
2. **Jain, A.**, Kerne, A., Fowler, H., Seo, J., Newman, G., Lupfer, N., and Perrine, A. How Could AI Support Design Education? A Study Across Fields Motivates Situating Analytics. *Submitting to ACM Transactions on Computer-Human Interaction (TOCHI)*.

PUBLICATIONS

1. Britain, G., **Jain, A.**, Lupfer, N., Kerne, A., Perrine, A., Seo, J., Sungkajun, A. Design is (A)live: An Environment Integrating Ideation and Assessment, In *Extended Abstracts of the ACM Conference on Human Factors in Computing Systems (CHI Late-Breaking Work) 2020*, 1-8.
2. **Jain, A.** Measuring Creativity: Multi-Scale Visual and Conceptual Design Analysis. In *Proceedings of the ACM Conference on Creativity & Cognition (C&C) 2017*, Graduate Student Symposium, 490-495.
3. Kerne, A., Lupfer, N., Linder, R., Qu, Y., Valdez, A., **Jain, A.**, Keith, K., Carrasco, M., Vanegas, J., Billingsley, A. Free-form Web Curation: Strategies for Creative Engagement with Prior Work. In *Proceedings of the ACM Conference on Creativity & Cognition (C&C) 2017*, 380-392 [29%].
4. **Jain, A.**, Kasiviswanathan, G., and Huang, R. Towards Accurate Event Detection in Social Media: A Weakly Supervised Approach for Learning Implicit Event Indicators. In *Proceedings of the Computational Linguistics (COLING) Workshop on Noisy User-Generated Text (WNUT) 2016*, 70-77.

5. Sharma, H. N., Touns, Z. O., Dolgov, I., Kerne, A., **Jain, A.** Evaluating Display Modalities using a Mixed Reality Game. In *Proceedings of the ACM Annual Symposium on Computer-Human Interaction in Play (CHI PLAY) 2016*, 65-77 [29%].
6. **Jain, A.**, Lupfer, N., Qu, Y., Linder, R., Kerne, A., Smith, S. M. Evaluating TweetBubble with Ideation Metrics of Exploratory Browsing. In *Proceedings of the ACM Conference on Creativity and Cognition (C&C) 2015*, 178-187 [28%]. **Best Paper Honorable Mention - Top 2%.**
7. Wilkins, J., Järvi, J., **Jain, A.**, Kerne, A., Kejriwal, G., Gumudavelly, V. EvolutionWorks: Towards Improved Visualization of Citation Networks. In *Proceedings of the IFIP Conference on Computer-Human Interaction (INTERACT) 2015*, 213-230 [29.9%].
8. Qu, Y., Kerne, A., Lupfer, N., Linder, R., **Jain, A.** Metadata Type System: Integrate Presentation, Data Models and Extraction to Enable Exploratory Browsing Interfaces. In *Proceedings of the ACM Engineering Interactive Computing Systems (EICS) 2014*, 107-116 [18%].
9. Fei, S., Webb, A. M., Kerne, A., Qu, Y., and **Jain, A.** Peripheral Array of Tangible NFC Tags: Positioning Portals for Embodied Trans-Surface Interaction. In *Proceedings of the ACM Conference on Interactive Tabletops and Surfaces (ITS) 2013*, 33-36 [29%].
10. **Jain, A.** and Singh, S. Modified Programming Language Framework for IVRS Accessibility of Graphical User Interfaces. U-Media, pp.163-167, In *Proceedings of the IEEE Conference on Ubi-Media Computing (U-Media) 2011*, 163-167 [34%].

TEACHING

- **Instructor of Record**, Dept. of Computer Science and Engineering, Texas A&M Spring 2021
CSCE 121 Introduction to Program Design and Concepts (C++)
- **Teaching Assistant**, Dept. of Computer Science and Engineering, Texas A&M Spring 2015–Fall 2020
CSCE 655 Human-Centered Computing
CSCE 482 Senior Capstone Design
CSCE 444 Structures of Interactive Information
CSCE 420 Artificial Intelligence
CSCE 315 Programming Studio
CSCE 206 Structured Programming (C++)
CSCE 121 Introduction to Program Design and Concepts (C++)

AWARDS & ACHIEVEMENTS

- **Best Teaching Assistant Nomination**, Dept. of Computer Science and Engineering, Texas A&M 2019–2020
- **Best Teaching Assistant Nomination**, Dept. of Computer Science and Engineering, Texas A&M 2018–2019
- **Outstanding Reviewer** Recognition for ACM CHI PLAY Full Papers 2019
- **Academy for Future Faculty Certificate**, Center for Teaching Excellence, Texas A&M 2018
- **Student Travel Grant**, College of Engineering, Texas A&M 2017
- **Student Travel Grant**, National Science Foundation 2017
- **Best Paper Honorable Mention** at ACM Creativity & Cognition 2015
- **Student Travel Grant**, College of Engineering, Texas A&M 2015
- **Extra Mile Award** at Samsung 2010
- **Best Attitude Award** at Samsung 2008
- **Six Sigma Green Belt** at Samsung 2008

SKILLS

- **Programming Languages:** C, C++, Java, Python, R
- **Web Programming:** HTML, JavaScript, REST, Node.js
- **Visualization Libraries:** D3.js, Three.js, Gephi
- **Machine Learning Libraries:** Scikit-learn, TensorFlow

PRESENTATIONS

- **LiveMâché: Ideation on the Web** Sep 2020
Georgia Tech ME 6102: Designing Open Engineering Systems
- **Measuring Creativity: Multi-Scale Visual and Conceptual Design Analysis** Jun 2017
C&C'17: Creativity and Cognition (Graduate Student Symposium)
- **Towards Accurate Event Detection in Social Media** Dec 2016
COLING'17: Computational Linguistics
- **Evaluating TweetBubble with Ideation Metrics of Exploratory Browsing** Jun 2015
C&C'15: Creativity and Cognition
- **Programming Language Framework for IVRS Accessibility of Graphical User Interfaces** Jul 2011
UMEDIA'11: Ubi-Media Computing

MENTORING

- **Gabriel Britain**, Undergraduate Student in Computer Science, Texas A&M Fall 2019–Spring 2020
Research: Design analytics dashboards and their integration with a multiscale design environment.
- **Hannah Fowler**, Undergraduate Student in Computer Science, Texas A&M Spring 2018–Fall 2018
Research: A grounded theory analysis of design instructors' teaching and assessment practices and needs.
- **Aaron Perrine**, Undergraduate Student in Computer Science, Texas A&M Spring 2018–Fall 2018
Research: Design analytics dashboards and their integration with a multiscale design environment.
- **Alex Stacy**, Undergraduate Student in Computer Science, Texas A&M Fall 2016
Research: BigSemantics-based wrappers for extracting and presenting information from social media.

SERVICE

- **Reviewer** 2015–2021
ACM CHI 2021, 2020, 2019, 2017, 2016
ACM DIS 2020, 2019, 2018, 2016
ACM CHI PLAY 2019, 2018, 2017
ACM CSCW 2020, 2018
ACM C&C 2019, 2015
EAI MobiHealth 2020
CogSci 2019
Psychonomic Bulletin 2019
- **Associate Chair** 2021

ACM Creativity & Cognition

- **Registration Chair**

2019

ACM Creativity & Cognition

- **Student Volunteer**

2012

Design Computing and Cognition

REFERENCES

Dr. Andruid Kerne

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Department of Computer Science and Engineering

Texas A&M University

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Dr. Steven M. Smith

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Department of Psychology

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Assistant Professor

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