Ajit Jain

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Education

Texas A&M University — College Station, USA
Ph.D. in Computer Science — 2015–2021
Co-Advisors: Dr. Andruid Kerne and Dr. Ruihong Huang
Thesis: How to Support Situated Design Education through AI-Based Analytics

Texas A&M University — College Station, USA
M.S. in Computer Science — 2011–2014
Advisor: Dr. Andruid Kerne
Thesis: TweetBubble: A Twitter Extension Stimulates Exploratory Browsing

Delhi Technological University — Delhi, India
B.E. in Information Technology — 2003–2007

Professional Experience

Centrum Wiskunde & Informatica — Amsterdam, Netherlands
Research Intern — Summer 2018
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.

Adobe Research — San Jose, USA
Research Intern — Summer 2017
Mentor: Dr. Eunyee Koh
Investigated interactive visualization of large-scale graph data toward supporting marketers in audience segmentation.

Google — Mountain View, USA
Software Engineer Intern — Summer 2016
Mentor: Amos Yoffe
Presented message results in Android *In Apps* Search clustered by topic and time. Launched in September 2016.

Google Summer of Code — College Station, USA
Student Developer — Summer 2012
Host Organization: Interface Ecology Lab, Texas A&M University
Created a RESTful service for meta-metadata structured web semantics represented in XML / JSON format.

Samsung — Noida, India and Suwon, S. Korea
Software Engineer and Commercialization Coordinator — Jul 2007–Aug 2011
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.

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.

Refereed Conference Papers

1. **Jain, A.**, Kerne, A., Lupfer, N., Britain, G., Perrine, A., Choe, Y., Keyser, J., and Huang, R. Recognizing Creative Visual Design: Multiscale Design Characteristics in Free-Form Web Curation Documents. In *Proceedings of the ACM Symposium on Document Engineering (DocEng) 2021*, 1-10 [33%]. **Best Paper Nomination, Best Student Paper Nomination**.

2. 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%].

3. Sharma, H. N., Toups, 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%].

4. **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%**.

5. 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%].

6. 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%].

7. 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%].

8. **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%].

Refereed Workshops and Extended Abstracts

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 [41.8%].

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. **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.

4. Sharma, H. N., Toups, Z. O., **Jain, A.**, Kerne, A. Designing to Split Attention in a Mixed Reality Game. In *Proceedings of the ACM Annual Symposium on Computer-Human Interaction in Play (CHI PLAY) 2015*, 691-696.

5. Fei, S., Kerne, A., **Jain, A.**, Webb, A. M., and Qu, Y. Positioning portals with peripheral NFC tags to embody trans-surface interaction. In *Proceedings of the ACM Conference on Interactive Tabletops and Surfaces (ITS) 2013*, 317-320.

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 Paper Nomination** at ACM Document Engineering — 2021
- **Best Student Paper Nomination** at ACM Document Engineering — 2021
- **Best Teaching Assistant Nomination**, Dept. of Computer Science and Engineering, Texas A&M — 2020–2021
- **Student Travel Grant**, College of Engineering, Texas A&M — 2021
- **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
- **Research Methods** : Interviews, Surveys, Observations, Workshops, Grounded Theory, Hypothesis Testing

Presentations

- **Recognizing Creative Visual Design: Multiscale Design Characteristics in Free-Form Web Curation Documents** Aug 2021
  DocEng'21: Document Engineering
- **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 2021, 2020, 2019, 2018, 2016
  ACM CHI PLAY 2019, 2018, 2017
  ACM CSCW 2022, 2020, 2018
  ACM C&C 2021, 2019, 2015
  ACM ICMI 2021
  EAI MobiHealth 2020
  CogSci 2021, 2019
  Psychonomic Bulletin 2019

- **Associate Chair** 2021

  ACM Creativity & Cognition

- **Judge, Student Research Week** 2021

  Texas A&M University

- **Registration Chair** 2019

  ACM Creativity & Cognition

- **Student Volunteer** 2012

  Design Computing and Cognition

References

Dr. Andruid Kerne
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