

POORNA TALKAD SUKUMAR

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RESEARCH INTERESTS

Human-Computer Interaction (HCI); Information Visualization; Computer-Supported Cooperative Work (CSCW); Personal Data Visualization; Cognitive Biases in Visualizations; Empirical Studies; Future of Work

EDUCATION

University of Notre Dame

Notre Dame, IN, USA

PH.D. COMPUTER SCIENCE AND ENGINEERING

08/15/2015 - 08/20/2021

- *Dissertation*: Contextual and Qualitative Approaches for Visualization Design
- Advisors: Prof. Aaron Striegel and Prof. Ronald Metoyer
- GPA: 4.0/4.0

Lancaster University

Lancashire, UK

M.SC. MOBILE AND UBIQUITOUS COMPUTING

10/01/2009 - 09/30/2010

- *Thesis*: Enhanced Stance Phase Detection and Extended Kalman Filtering for Strapdown Pedestrian Dead Reckoning
- Thesis Supervisor: Dr. Mike Hazas

Dayananda Sagar College of Engineering

Bengaluru, India

B.E. COMPUTER SCIENCE AND ENGINEERING

06/01/2004 - 05/31/2008

PROFESSIONAL APPOINTMENTS

Postdoctoral Associate

Brooklyn, NY, USA

Advisor: Prof. Oded Nov

Tandon School of Engineering, New York University

09/01/2022 - Present

-Responsible for performing research and teaching one Master's course per year.

Assistant Professor (tenure-track)

Schenectady, NY, USA

Department of Computer Science, Union College

09/01/2021 - 08/31/2022

-Responsible for teaching five undergraduate courses per year, performing research, advising students, and providing service to the college.

Graduate Research Assistant

Notre Dame, IN, USA

Department of Computer Science and Engineering, University of Notre Dame

05/15/2016 - 08/20/2021

-Performed research towards a Ph.D. under the supervision of Dr. Aaron Striegel and Dr. Ronald Metoyer.

Graduate Teaching Assistant

Notre Dame, IN, USA

Department of Computer Science and Engineering, University of Notre Dame

08/15/2015 - 05/14/2016

-Performed research towards a Ph.D. under the supervision of Dr. Aaron Striegel and Dr. Ronald Metoyer.
-Assisted instructors with their courses by developing course content, delivering lectures, grading exams and assignments, and holding office hours.

Project Associate

Bengaluru, India

Department of Computer Science and Automation, Indian Institute of Science

01/01/2012 - 07/15/2015

-Developed a low-cost system with multiple inertial sensors to assess gait used in the treatment of post-stroke patients and patients with cerebral palsy.

Software Developer

Bristol, UK

Matter 2 Media

01/01/2011 - 09/01/2011

-Successfully developed applications where touch technologies, such as NFC/RFID and QR codes, are associated with physical objects and on interacting with these objects embedded in the real world, the applications delivered location-specific content and experiences to users.

Research Assistant

Lancashire, UK

Computing Department, Lancaster University

10/01/2010 - 12/31/2010

-Continued to work on my Master's thesis and implemented an improved stand-alone pedestrian-tracking system using shoe-mounted inertial sensors aimed at addressing the needs of emergency responders.

PUBLICATIONS

REFEREED JOURNAL ARTICLES

Reinholz, D., Ridgway, S., **Talkad Sukumar, P.**, and Shah, N. 2022. Visualizing Inequity: How Data Visualizations Can Support Sensemaking About Racial Inequity (*Under Review*).

Breideband, T., Martinez, G., **Talkad Sukumar, P.**, Caruso, M., D'Mello, S., Striegel, A.D., and Mark, G. 2022. Sleep Patterns and Sleep Alignment in Remote Teams during COVID-19. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW2), 1-31.

Breideband, T., **Talkad Sukumar, P.**, Mark, G., Caruso, M., D'Mello, S., and Striegel, A.D. 2022. Home-Life and Work Rhythm Diversity in Distributed Teamwork: A Study with Information Workers during the COVID-19 Pandemic. *Proceedings of the ACM on Human-Computer Interaction*, 6(CSCW1), 1-23.

Talkad Sukumar, P., Metoyer, R., He, S. 2018. Making a Pecan Pie: Understanding and Supporting The Holistic Review Process in Admissions. *Proceedings of the ACM on Human-Computer Interaction*, 2(CSCW), 1-22. [25.6% Acceptance Rate].

Fischer, C., **Talkad Sukumar, P.**, Hazas, M. 2012. Tutorial: implementation of a pedestrian tracker using foot-mounted inertial sensors. *IEEE Pervasive Computing*, 12(2), 17-27.

REFEREED CONFERENCE AND WORKSHOP ARTICLES

Talkad Sukumar, P., Dey, A., Mark, G., Metoyer, R., and Striegel, A.D. 2022. Triggers and Barriers to Insight Generation on a Personal Visualization Interface. *In Graphics Interface 2022*.

Talkad Sukumar, P., Martinez, G.J., Grover, T., Mark, G., D'Mello, S.K., Chawla, N.V., Mattingly, S.M. and Striegel, A.D. 2020. Characterizing Exploratory Behaviors on a Personal Visualization Interface Using Interaction Logs. *EuroVis 2020 - Short Papers*. [45.7% Acceptance Rate]

Talkad Sukumar, P. and Metoyer, R. 2019. Mobile Devices in Programming Contexts: A Review of the Design Space and Processes. *In Proceedings of the 2019 on Designing Interactive Systems Conference (pp. 1109-1122)*. [25% Acceptance Rate]

Zhi, Q., Lin, S., **Talkad Sukumar, P.**, and Metoyer, R. 2019 GameViews: Understanding and Supporting Data-driven Sports Storytelling. *In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (pp. 1-13)*. [23.8% Acceptance Rate, **Best Paper Honorable Mention Award (top 5%)**]

Talkad Sukumar, P., Liu, A., and Metoyer, R. 2018. Replicating User-defined Gestures for Text Editing. *In Proceedings of the 2018 ACM International Conference on Interactive Surfaces and Spaces (pp. 97-106)*. [26.7% Acceptance Rate]

Talkad Sukumar, P. and Metoyer, R. 2018. Towards Designing Unbiased Replication Studies in Information Visualization. *In 2018 IEEE Evaluation and Beyond-Methodological Approaches for Visualization (BELIV) (pp. 93-101)*.

Talkad Sukumar, P., He, S., and Metoyer, R. 2017. Holistic Reviews in Admissions: Reviewer Biases and Visualization Strategies to Mitigate Them. *In DECISIVE: Workshop on Dealing with Cognitive Biases in Visualizations. IEEE VIS*.

BOOK CHAPTER AND THESES

Talkad Sukumar, P. 2021. Contextual and Qualitative Approaches for Visualization Design. *Doctoral Dissertation, University of Notre Dame.*

Talkad Sukumar, P. and Metoyer, R. 2018. A Visualization Approach to Addressing Reviewer Bias in Holistic College Admissions. *In Cognitive Biases in Visualizations (pp. 161-175). Springer, Cham.*

Talkad Sukumar, P. 2010. Enhanced Stance Phase Detection and Extended Kalman Filtering for Strapdown Pedestrian Dead Reckoning. *Master's Thesis, Lancaster University, UK*

PANEL, CASE STUDY, POSTER

Talkad Sukumar, P., Breideband, T., Martinez, G., Caruso, M., Rose, S., Steputis, C., D'Mello, S., Mark, G., and Striegel, A. 2021. Designing an Interactive Visualization System for Monitoring Participant Compliance in a Large-scale, Longitudinal Study. *In Extended Abstracts of the 2021 CHI Conference on Human Factors in Computing Systems (pp. 1-8). [21% Acceptance Rate]*

Talkad Sukumar, P., Avellino, I., Remy, C., DeVito, M. A., Dillahunt, T. R., McGrenere, J., and Wilson, M. L. 2020. Transparency in Qualitative Research: Increasing Fairness in the CHI Review Process. *In Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1-6). [28.6% Acceptance Rate].*

Talkad Sukumar, P., Reinholz, D., Shah, N., and Striegel, A. 2020. Visualizing Participatory Inequities in Classroom Data. *IEEE VIS 2020 Electronic Conference Proceedings [Poster].*

AWARDS AND RECOGNITIONS

2019-2022 **Special Recognition for Outstanding Reviews, CHI'22, CHI'20, and CSCW'19 Papers**

2020 **Participant, Doctoral Colloquium, IEEE VIS conference**

2019 **Outstanding Graduate TA Award, Dept of Computer Science and Engineering, University of Notre Dame**

Best Paper Honorable Mention Award, ACM CHI conference ("GameViews: Understanding and Supporting Data-driven Sports Storytelling")

2017 **Joseph F. Downes Memorial Award for Conference Travel, University of Notre Dame**

\$ 1,500

CRA-W Grad Cohort Scholarship, Computing Research Association (CRA)

\$ 1,500

PRESENTATIONS

INVITED TALK

Invited talk (virtual): At **Union College**, Schenectady, NY. May 2021. "Towards a Realistic Understanding Of Personal Visualization."

CONFERENCE AND WORKSHOP PAPER PRESENTATIONS

EuroVis conference (virtual). May 2020. Presented paper, "Characterizing Exploratory Behaviors on a Personal Visualization Interface Using Interaction Logs."

Designing Interactive Systems (DIS) conference, San Diego, USA. June 2019. Presented paper, "Mobile Devices in Programming Contexts: A Review of the Design Space and Processes"

Interactive Surfaces and Spaces (ISS) conference, Tokyo, Japan. Nov 2018. Presented paper "Replicating User-defined Gestures for Text Editing"

CSCW conference, Jersey City, USA. Nov 2018. Presented paper "Making a Pecan Pie: Understanding and Supporting The Holistic Review Process in Admissions"

- Evaluation and Beyond-Methodological Approaches for Visualization (BELIV) Workshop, IEEE VIS**, Berlin, Germany. Oct 2018. Presented mini-tutorial “Towards Designing Unbiased Replication Studies in Information Visualization.”
- Dealing with Cognitive Biases in Visualisations (DECISIVE) Workshop, IEEE VIS**, Phoenix, Arizona. Oct 2017. Presented paper “Holistic Reviews in Admissions: Reviewer Biases and Visualization Strategies to Mitigate them.”

TEACHING EXPERIENCE

New York University

POSTDOCTORAL ASSOCIATE, DEPARTMENT OF TECHNOLOGY MANAGEMENT AND INNOVATION

*Brooklyn, NY, USA
Sept 2022 - Present*

- **MG-GY 6203 Data Visualization for Business Intelligence** [S23]

Union College

ASSISTANT PROFESSOR, DEPARTMENT OF COMPUTER SCIENCE

*Schenectady, NY, USA
Sept 2021 - Present*

- **CSC 105 - Game Development: Introduction to Computer Science** [F21] [W22]
- **CSC 250 - Algorithm Design and Analysis** [S22]
- **CSC 380 - User Interfaces** [S22]

University of Notre Dame

GRADUATE TEACHING ASSISTANT, DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

*Notre Dame, IN, USA
2015-2016, 2018*

- **Human-Computer Interaction (HCI)** [S16] [S18]
Instructor: Prof. Ronald Metoyer
- **Data Mining** [F15]
Instructor: Prof. Nitesh Chawla

SERVICE

- 2019- **Reviewer**, ACM CHI 2019–2022, ACM CSCW 2019-2022, IEEE VIS 2021, ACM MobileHCI 2022, IEEE TVCG 2015–2016, ACM UIST 2021.
- 2022 **Member of Faculty Search Committee (Visiting Assistant Professor)**, Union College
- 2022 **Member of Union Coalition for Inclusiveness and Diversity (UCID)**, Union College
- 2019 **Session Chair**, ACM DIS and CHI conferences
- 2019 - 2020 **Graduate Student Union representative**, Dept of Computer Science and Engineering, University of Notre Dame

REFERENCES

Dr. Aaron Striegel

PROFESSOR, DEPT OF COMPUTER SCIENCE AND ENGINEERING
UNIVERSITY OF NOTRE DAME

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Dr. Ronald Metoyer

PROFESSOR, DEPT OF COMPUTER SCIENCE AND ENGINEERING
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Dr. Gloria Mark

PROFESSOR, DEPT OF INFORMATICS
UNIVERSITY OF CALIFORNIA, IRVINE

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