

AKANKSHA ATREY

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OBJECTIVE

I am pursuing my Ph.D. in Computer Science under Prof. David Jensen at the Knowledge Discovery Laboratory, University of Massachusetts Amherst. My current research interests lie in building and using causal models to understand and explain deep networks.

EDUCATION

University of Massachusetts Amherst Sep 2017 - present
M.S./Ph.D in Computer Science

University at Albany, SUNY (CEAS) Aug 2014 - Dec 2016
B.Sc. Computer Science and Mathematics

- Summa Cum Laude, Deans List of Distinguished Students (4.0 GPA)
- Presidential Honor Society, Tau Sigma National Honor Society

University of Winnipeg Sep 2013 - Jun 2014
Freshmen year of B.Sc. only

- Deans Honor List (3.96 GPA)

RESEARCH EXPERIENCE

University of Massachusetts Amherst (CICS) Sep 2017 - present
Research Assistant in the Knowledge Discovery Laboratory

- Explainable artificial intelligence

University at Albany, SUNY (CEAS) Aug 2014 - Dec 2016
Undergraduate Research Projects

- Twitter popularity diffusion of presidential candidates through detection of twitter bots (w/ Prof. Feng Chen)
- E-petition information diffusion in online social networks (w/ Prof. Teresa Harrison)
- Reeb graph based validation of statistical predictive models for the spread of AIDS (w/ Prof. Elizabeth Munch)

Rutgers University, New Brunswick (SCI) May 2016 - Aug 2016
Research Intern w/ Prof. Vivek Singh

- Faces in Places: Real-time Diversity Analytics Using Social Media

WORK EXPERIENCE

IBM (Poughkeepsie, NY) Jan 2017 - Aug 2017
Software Engineer

- Level 2 Service for IBM z/OS mainframe
- Worked with the Supervisor and RTM components
- Languages/Tools: PLX, machine code, assembler

University at Albany, SUNY (Albany, NY) Jan 2015 - Dec 2016
Teaching Assistant

- Introduction to Computer Science, Programming at the Hardware/Software Interface, Systems Programming, Automata Formal Theory

Auto/Mate Dealership Systems (Albany, NY)

Sep 2016 - Dec 2016

Software Developer Intern

- Worked on ReportMate on COBOL to PSQL conversions
- Languages/Tools: Java, SQL

Commerce Hub (Albany, NY)

Feb 2016 - May 2016

Software Engineer Intern

- Worked in Product Stream team, responsible for various updates, writing testing scripts, etc.
- Languages/Tools: Java, Groovy, MongoDB, Spock

VoxVilla, LLC (Albany, NY)

May 2015 - Aug 2015

Web Developer Intern

- Responsible for creating database and design of website
- Languages/Tools: Java, PHP, HTML5, SQL

PUBLICATIONS

- [1] OKTAY, H., ATREY, A., AND JENSEN, D. Identifying when effect restoration will improve estimates of causal effect. In *SIAM International Conference on Data Mining* (2019)
- [2] WITTY, SAM, L., KI, J., TOSCH, E., ATREY, A., JENSEN, D., AND LITTMAN, M. Generalization in deep reinforcement learning. In *Critiquing and Correcting Trends in Machine Learning Workshop at NeurIPS* (2018)
- [3] SINGH, V. K., ATREY, A., AND HEGDE, S. Do individuals smile more in diverse social company?: Studying smiles and diversity via social media photos. In *ACM Multimedia* (2017), ACM, pp. 1818–1827
- [4] HARRISON, T. M., DUMAS, C., DEPAULA, N., FAKE, T., MAY, W., ATREY, A., LEE, J., RISHI, L., AND RAVI, S. E-petitioning and online media: The case of #bringbackourgirls. In *International Conference on Digital Government Research* (2017), ACM, pp. 11–20
- [5] SINGH, V. K., HEGDE, S., AND ATREY, A. Towards measuring fine-grained diversity using social media photographs. In *ICWSM* (2017), pp. 668–671
- [6] DUMAS, C. L., ATREY, A., LEE, J., HARRISON, T. M., FAKE, T., ZHAO, X., AND RAVI, S. E-petition information diffusion in online social networks. In *International Conference on Digital Government Research* (2016), ACM, pp. 515–517

TALKS AND PRESENTATIONS

- [1] *Identifying When Effect Restoration Will Improve Estimates of Causal Effect*. SIAM International Conference on Data Mining (SDM) 2019. May 2019. Paper talk & poster.
- [2] *Do Diverse Social Interactions Make Us Smile More Often? Studying Smiles and Diversity Via Social Media Photos*. ACM Multimedia (ACMMM) 2017. October 2017. Paper talk & poster. (Travel funded by ACMMM)
- [3] *Twitter Popularity Diffusion of Presidential Candidates through Detection of Twitter Bots*. MIT IEEE Undergraduate Research Conference (URTC). November 2016. Poster.
- [4] *Reeb Graph Based Validation of Statistical Predictive Models for Spread of AIDS*. Grace Hopper Celebration of Women in Computing (GHC). October 2015. Poster.
- [5] *Reeb Graph Based Validation of Statistical Predictive Models for Spread of AIDS*. New York Celebration of Women in Computing (NYCWIC). April 2015. Short talk.

AWARDS AND HONORS

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| NSF Graduate Research Fellowship Program Honorable Mention | Apr 2019 |
| Lori A. Clarke Scholarship in Computer Science | Jun 2018 |
| CRA-W Grad Cohort 2018 Invitation and Travel Grant | Apr 2018 |
| Lita and Stephen Greenwald Research Fund Award | May 2017 |
| ISO President's Medal for Exemplary Leadership | Apr 2017 |
| Spellman Top Academic Achievement Award | Apr 2017 |
| CRA-W Research Scholar (for Grace Hopper Celebration) | Oct 2016 |
| Bruce B. and Louise Steen Gravitt Scholarship | May 2016 |
| Spellman Top Academic Achievement Award | Mar 2016 |
| Tau Sigma National Honor Society Scholarship | Jan 2016 |
| Women and Technology Award and Scholarship | Jun 2015 |
| Ross A. Johnston Entrance Scholarship in Math and Statistics | Sep 2013 |

EXTRA-CURRICULAR SERVICE

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|---|-------------------------|---------------------|
| Indian Student Association (UMass Amherst) | <i>Vice President</i> | Apr 2018 - May 2019 |
| CS New Student Committee (UMass Amherst) | <i>Chair</i> | Sep 2017 - May 2018 |
| CS Social Committee (UMass Amherst) | <i>Chair</i> | Sep 2017 - May 2018 |
| Graduate Student Senate (UMass Amherst) | <i>Senator</i> | Sep 2017 - Dec 2017 |
| Indian Student Organization (UAlbany) | <i>Vice President</i> | Jun 2016 - Dec 2016 |
| Tau Sigma National Honor Society (UAlbany) | <i>President</i> | Mar 2016 - Dec 2016 |
| Office of Undergraduate Education (UAlbany) | <i>Transfer Student</i> | Sep 2015 - Dec 2016 |
| | <i>Peer Mentor</i> | |
| Tau Sigma National Honor Society (UAlbany) | <i>Secretary</i> | Mar 2015 - Mar 2016 |
| Asian Pacific American Conference (UAlbany) | <i>Logistics Chair</i> | Jan 2015 - Apr 2015 |
| Victoria General Hospital (Winnipeg, MB) | <i>Volunteer</i> | Aug 2012 - Jun 2014 |