

CODY DUNNE

Northeastern University
College of Computer and Information Science
c.dunne@northeastern.edu
ccs.neu.edu/home/cody

Curriculum Vitae

EDUCATION

- PhD, Computer Science**, *University of Maryland, MD* Aug 2007 – Aug 2013
Specialty: Information Visualization/Human-Computer Interaction, Advisor: [Professor Ben Shneiderman](#)
Dissertation: “[Measuring and Improving the Readability of Network Visualizations](#)”
- MS, Computer Science**, *University of Maryland, MD* Aug 2007 – May 2009
- BA, magna cum laude, Double Major in Computer Science & Mathematics**, *Cornell College, IA* Aug 2003 – Jun 2007

RESEARCH EXPERIENCE

- Northeastern University**, *College of Computer and Information Science* – Assistant Professor Aug 2016 – present
- IBM**, *Watson & Watson Health Cognitive Visualization Lab* – Research Scientist Jun 2014 – Jul 2016
- IBM**, *Research & Watson Cognitive Visualization Lab* – Postdoctoral Researcher Sep 2013 – Jun 2014
- University of Maryland**, *Computer Science & iSchool* – Research Assistant Aug 2010 – Dec 2011, May 2012 – May 2013
- Microsoft Research**, *Visualization and Interaction for Business and Entertainment* – Research Intern Jun 2010 – Sep 2010
- University of Maryland**, *Computer Science & iSchool* – Research Assistant Jun 2008 – May 2010
- NIST**, *Manufacturing Engineering Lab* – Research Fellow Jun 2006 – Aug 2006, Jun 2007 – Aug 2007

SELECTED PUBLICATIONS

Refereed Journal Articles

- [4] Dunne, C, Ross, SI, Shneiderman, B, and Martino, M. “[Readability metric feedback for aiding node-link visualization designers](#)”. In: *IBM Journal of Research and Development* 59.2/3 (2015), 14:1–14:16. DOI: [10.1147/JRD.2015.2411412](https://doi.org/10.1147/JRD.2015.2411412).
- [3] Chaturvedi, S, Dunne, C, Ashktorab, Z, Zacharia, R, and Shneiderman, B. “[Group-in-a-Box meta-layouts for topological clusters and attribute-based groups: space efficient visualizations of network communities and their ties](#)”. In: *CGF: Computer Graphics Forum* 33.8 (2014), pp. 52–68. DOI: [10.1111/cgf.12400](https://doi.org/10.1111/cgf.12400).
- [2] Dunne, C, Shneiderman, B, Gove, R, Klavans, J, and Dorr, B. “[Rapid understanding of scientific paper collections: Integrating statistics, text analytics, and visualization](#)”. In: *JASIST: Journal of the American Society for Information Science and Technology* 63.12 (2012), pp. 2351–2369. DOI: [10.1002/asi.22652](https://doi.org/10.1002/asi.22652).
- [1] Shneiderman, B, Dunne, C, Sharma, P, and Wang, P. “[Innovation trajectories for information visualizations: Comparing treemaps, cone trees, and hyperbolic trees](#)”. In: *IVS: Information Visualization* 11.2 (2012), pp. 87–105. DOI: [10.1177/1473871611424815](https://doi.org/10.1177/1473871611424815).

Refereed Conference Papers

Human-computer interaction (HCI) and visualization research is interdisciplinary and valuable to readers from many areas. Moreover, premier HCI and visualization conferences (e.g., CHI, EuroVis) are highly selective, archived, and exceed many relevant journals in terms of both selectivity and impact.

- [13] Michele, B, Braghin, S, Calabrese, F, Dunne, C, Gkoufas, Y, Martino, M, Rasmussen, J, and Ross, S. “[S&P360: multidimensional perspective on companies from online data sources](#)”. In: *ECML-PKDD '15: Proc. European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*. 2015. DOI: [10.1007/978-3-319-23461-8_39](https://doi.org/10.1007/978-3-319-23461-8_39).
- [12] Dunne, C, Muller, M, Perra, N, and Martino, M. “[VoroGraph: visualization tools for epidemic analysis](#)”. In: *CHI EA '15: Proc. SIGCHI Conference on Human Factors in Computing Systems Extended Abstracts*. 2015, pp. 255–258. DOI: [10.1145/2702613.2725459](https://doi.org/10.1145/2702613.2725459).
- [11] Amjad, S, Mukhtar, H, and Dunne, C. “[Automating scholarly article data collection with Action Science Explorer](#)”. In: *ICOSST '14: Proc. 8th IEEE 2014 International Conference on Open-Source Systems and Technologies*. 2014. DOI: [10.1109/ICOSST.2014.7029338](https://doi.org/10.1109/ICOSST.2014.7029338).

- [10] Malik, S, Smith, A, Hawes, T, Papadatos, P, Li, J, Dunne, C, and Shneiderman, B. “[TopicFlow: visualizing topic alignment of Twitter data over time](#)”. In: *ASONAM '13: Proc. IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining*. 2013, pp. 720–726. DOI: [10.1145/2492517.2492639](#).
- [9] Dunne, C and Shneiderman, B. “[Motif simplification: improving network visualization readability with fan, connector, and clique glyphs](#)”. In: *CHI '13: Proc. SIGCHI Conference on Human Factors in Computing Systems*. 2013, pp. 3247–3256. DOI: [10.1145/2470654.2466444](#).
- [8] Shneiderman, B and Dunne, C. “[Interactive network exploration to derive insights: Filtering, clustering, grouping, and simplification](#)”. In: *GD '12: Proc. 20th International Symposium on Graph Drawing*. Vol. 7704. Keynote. 2012, pp. 2–18. DOI: [10.1007/978-3-642-36763-2_2](#).
- [7] Dunne, C, Riche, NH, Lee, B, Metoyer, RA, and Robertson, GG. “[GraphTrail: Analyzing large multivariate, heterogeneous networks while supporting exploration history](#)”. In: *CHI '12: Proc. SIGCHI Conference on Human Factors in Computing Systems*. 2012, pp. 1663–1672. DOI: [10.1145/2207676.2208293](#).
- [6] Gove, R, Gramsky, N, Kirby, R, Sefer, E, Sopan, A, Dunne, C, Shneiderman, B, and Taieb-Maimon, M. “[NetVisia: Heat map & matrix visualization of dynamic social network statistics & content](#)”. In: *SocialCom '11: Proc. 2011 IEEE 3rd International Conference on Social Computing*. 2011, pp. 19–26. DOI: [10.1109/PASSAT/SocialCom.2011.216](#).
- [5] Gove, R, Dunne, C, Shneiderman, B, Klavans, J, and Dorr, B. “[Evaluating visual and statistical exploration of scientific literature networks](#)”. In: *VL/HCC '11: Proc. 2011 IEEE Symposium on Visual Languages and Human-Centric Computing*. 2011, pp. 217–224. DOI: [10.1109/VLHCC.2011.6070403](#).
- [4] Bonsignore, EM, Dunne, C, Rotman, D, Smith, M, Capone, T, Hansen, DL, and Shneiderman, B. “[First steps to NetViz Nirvana: Evaluating social network analysis with NodeXL](#)”. In: *CSE '09: Proc. 2009 International Conference on Computational Science and Engineering*. Vol. 4. 2009, pp. 332–339. DOI: [10.1109/CSE.2009.120](#).
- [3] Mohammad, S, Dunne, C, and Dorr, B. “[Generating high-coverage semantic orientation lexicons from overtly marked words and a thesaurus](#)”. In: *EMNLP '09: Proc. 2009 conference on Empirical Methods in Natural Language Processing*. 2009, pp. 599–608.
- [2] Smith, M, Shneiderman, B, Milic-Frayling, N, Rodrigues, EM, Barash, V, Dunne, C, Capone, T, Perer, A, and Gleave, E. “[Analyzing \(social media\) networks with NodeXL](#)”. In: *C&T '09: Proc. 4th International Conference on Communities and Technologies*. 2009, pp. 255–264. DOI: [10.1145/1556460.1556497](#).
- [1] Blue, R, Dunne, C, Fuchs, A, King, K, and Schulman, A. “[Visualizing real-time network resource usage](#)”. In: *VizSec '08: Proc. 5th international workshop on Visualization for Computer Security*. 2008, pp. 119–135. DOI: [10.1007/978-3-540-85933-8_12](#).

Conference/Workshop Papers

- [1] Dunne, C, Skelton, C, Diamond, S, Martino, M, and Meirelles, I. “[Quantitative, qualitative, and historical urban data visualization tools for professionals and stakeholders](#)”. In: *HCII '16: Proc. HCI International*. 2016. DOI: [10.1007/978-3-319-39862-4_37](#).

Technical Reports

- [2] Dunne, C, Shneiderman, B, and Johnson, T. *Understanding patterns in patient discharge summaries using network analysis*. Human-Computer Interaction Lab Tech Report HCIL-2014-06. University of Maryland, 2014.
- [1] Dunne, C and Shneiderman, B. *Improving graph drawing readability by incorporating readability metrics: A software tool for network analysts*. Human-Computer Interaction Lab Tech Report HCIL-2009-13. University of Maryland, 2009.

Patents

- [1] Riche, N, Lee, B, and Dunne, C. “[Interactive visualization for exploring multi-modal, multi-relational, and multivariate graph data](#)”. English. US Patent 8743122. 2014.

Patent Applications

- [4] Dunne, C, Keahey, TA, Martino, M, and Park, DG. “Interactive Visualization”. U.S. Patent Application. 1/4 applications. 2016.
- [3] Dunne, C, Keahey, TA, Martino, M, and Park, DG. “Interactive Visualization”. U.S. Patent Application. 2/4 applications. 2016.
- [2] Dunne, C, Keahey, TA, Martino, M, and Park, DG. “Interactive Visualization”. U.S. Patent Application. 3/4 applications. 2016.
- [1] Dunne, C, Keahey, TA, Martino, M, and Park, DG. “Interactive Visualization”. U.S. Patent Application. 4/4 applications. 2016.

Tutorials

- [4] Dunne, C. *D3 and Apatite – So happy together*. Tutorial at Boston Cleanweb Hackathon. 2015.
- [3] Dunne, C. *Network Visualization in NodeXL*. Tutorial at Boston Data Swap Skill-A-Thon. 2013.
- [2] Dunne, C. *Charting collections of connections in social media: creating visualizations with NodeXL*. Tutorial at the University of Maryland College of Journalism. 2012.
- [1] Dunne, C. *Charting collections of connections in social media: creating visualizations with NodeXL*. Tutorial at dg.o 2012: 13th Annual International Conference on Digital Government Research. 2012. DOI: [10.1145/2307729.2307795](https://doi.org/10.1145/2307729.2307795).

TEACHING EXPERIENCE

Northeastern University, <i>Computer & Information Science</i> – Instructor, S.T. Visualization for Network Science	Fall 2016
University of Maryland, <i>Computer Science</i> – Teaching Assistant, Object Oriented Programming II	Spring 2012
University of Maryland, <i>Computer Science</i> – Teaching Assistant, Object Oriented Programming II	Spring 2008
University of Maryland, <i>Computer Science</i> – Teaching Assistant, Object Oriented Programming I	Fall 2007
Boys & Girls Clubs of America, <i>Worland, WY</i> – Technology Center Director	Jun 2001 – Jul 2003

STUDENTS ADVISED

Ph.D. and Masters Committee

Daniel Weidele* (PhD Candidate), University of Konstanz – Department of Computer and Information Science 2015–

Research Assistant

Minsheng “Davidson” Zheng (MDes Candidate), OCAD University – Digital Futures 2015–

Intern

Deok Gun Park* (PhD Candidate), University of Maryland – Department of Computer Science 2015
Daniel Weidele* (PhD Candidate), University of Konstanz – Department of Computer and Information Science 2015
Alix Lacoste (PhD), Harvard University – Department of Molecular and Cellular Biology 2014
Levgeniia “Jane” Gutenko (PhD Candidate), Stony Brook University – Department of Computer Science 2014

Research Mentor

Deok Gun Park* (PhD Candidate), University of Maryland – Department of Computer Science 2015–2016
Sehrish Amjad (MS), National University of Sciences and Technology – School of Electrical Eng. and Computer Sci. 2014

PROFESSIONAL ACTIVITIES/SERVICE

Conference Host & Organizer

[GD: International Symposium on Graph Drawing & Network Visualization](#) 2017

Session Chair

GD: International Symposium on Graph Drawing & Network Visualization 2016

Conference Program Committees

GD: International Symposium on Graph Drawing & Network Visualization 2016
IUI: ACM Conference on Intelligent User Interfaces 2015
business|vis: Workshop on Visualization in Business 2015
IDEA: ACM SIGKDD Conference Workshop on Interactive Data Exploration and Analytics 2013–2015
AVI: Advanced Visual Interfaces International Working Conference 2010–2016
SocialCom: ASE/IEEE International Conference on Social Computing 2012

Reviewing for Journals and Conferences

CHI: ACM SIGCHI Conference on Human Factors in Computing Systems	2012, 2015 – 2017
TVCG: IEEE Transactions on Visualization and Computer Graphics	2010, 2011, 2014, 2016
VAST: IEEE Symposium on Visual Analytics Science and Technology Challenge	2009, 2014 – 2016
UIST: ACM Symposium on User Interface Software and Technology	2015
EuroVis: Eurographics Conference on Visualization	2011 – 2013, 2016
InfoVis: IEEE Information Visualization Conference	2009 – 2015
TRB: Transportation Research Board Annual Meeting	2015
IVS: Information Visualization	2014
JPM: Journal of Personalized Medicine	2014
JASIST: Journal of the American Society for Information Science and Technology	2011 – 2013
NLPIR4DL: ACL/IJCNLP-2009 Workshop on Text and Citation Analysis for Scholarly Digital Libraries	2009

Service at Northeastern University

PhD CS Admissions Committee	2016–2017
-----------------------------	-----------

Service at IBM

IBM Cambridge Intern Site Culture Lead, running educational events, social activities, and talk series	2014 – 2015
Arranged and hosted several visiting speakers	2014 – 2015
Organized and hosted hiring interviews and talks for numerous candidates	2014 – 2015
Assist in creation of Cambridge Research and Cognitive Visualization Lab web pages	2015
Kitchen executive and volunteer for Saturday's Bread soup kitchen in Boston	2014 – 2015

Service at the University of Maryland

Planned and organized the HCIL 30th Anniversary Holiday Party and Poster Session	2012
Volunteer at the annual Human-Computer Interaction Lab Symposium	2009 – 2012
Contact for admitted students	2009 – 2012
Volunteer and organizer for admitted student visit day	2009 – 2011
Panelist for graduate school admissions workshop	2010

Service at Cornell College

President, Torch chapter of the Mortar Board national senior honor society	2007
President, Sigma Tau Service & Social Group, sponsor of an annual scholarship & science fair award	2005 – 2007
Treasurer, Sigma Tau Service & Social Group	2005 – 2006
Numerous volunteer activities with the Leadership and Service Office	2003 – 2007
Treasurer, Cornell College Chapter of the Mathematical Association of America	2006
Sponsored and organized a seminar on repetitive stress injuries	2006
Lunch Buddies elementary school mentoring program	2004 – 2006
Cornell College Mathematics Department Faculty Search Committee	2005
Sophomore Writing Portfolio Pilot Project	2005
Disc jockey for KRNL (the college radio station)	2003

HONORS AND AWARDS

IBM Manager's Choice Award for Showing a Personal Interest and running the intern summer social program	2014
Yahoo-HCIL Data Visualization Research Award for my work on motif simplification	2013
Selected as University of Maryland student representative to the Human Computer Interaction Consortium Workshop	2013
University of Maryland Distinguished Teaching Assistant Award (Top 10% of TAs)	2012
ACM Turing Centenary Celebration Student Scholarship	2012
University of Maryland Jacob K. Goldhaber & Computer Science Department Travel Grants	2012 – 2013
Featured as an NSF Discoveries Report : <i>A new visualization method makes research more organized and efficient</i>	2011
Featured in a Linux Magazine cover story : <i>Security Visualization Tools</i>	2009
Cornell College Senior Computer Science Student Achievement Award	2007
Cornell College Dean's List (all 8 semesters)	2003 – 2007
Nominated to Mortar Board National College Senior Honor Society in recognition of service & scholastic achievements	2006
Ed Hill Mathematics Scholar	2006
Cornell College First Year Computer Science Student Achievement Award	2004
First place in ACM N. Central N. America Programming Contest	2004
Cornell College National Excellence Scholarship	2003
National Merit Finalist	2003

SELECTED MEDIA COVERAGE

<i>From Giant Hairballs to Clear Patterns in Networks</i> , Visual Business Intelligence, by Stephen Few	May 2013
<i>Network Diagrams Simplified</i> , FlowingData.com, by Kim Rees	May 2012
<i>Thoughts on the HCIL symposium</i> , FlowingData.com, by Kim Rees	May 2012
<i>Google and Twitter "Like" Social Indexing</i> , IEEE Computer Computing Now, by George Lawton	July 2011
สรุปการประชุมทางวิชาการและการฝึกอบรม หัวข้อ , Royal Thai Embassy, Office of Science and Technology	June 2011
<i>NetGrok. Visualizando gráficamente el tráfico de red en tiempo real. Visualización...</i> , seguridadyredes.wordpress.com	Nov 2010
<i>NetGrok and AfterGlow: Visualizing the Zeus attack against government...</i> , ISSA Journal, by Russ McRee, 8, 40–32	Mar 2010
<i>Visualizing IDS Output: Tools and Methodology</i> , Presentation at RSA Conference, by Russ McRee	Mar 2010

OTHER EXPERIENCE

Absaroka Farm , Worland, WY – Agronomist, Seed Collector	Jul 2003 – Aug 2003, Jun 2004 – Aug 2004
Wind River Seed , Manderson, WY – System Administrator	Jun 2004 – Aug 2004
Frontier DJ , Manderson, WY – Owner, Disc Jockey	Jul 2000 – Aug 2003

ADDITIONAL INFORMATION

Coding & Development: Developed tools in JavaScript, D3, HTML, CSS, Java, NetBeans Platform, C#, WPF, Python, Prefuse, NetworkX, and L^AT_EX.

Visualization & Analysis: Developed visualizations using NodeXL, Spotfire, Prefuse, and NetworkX. Some experience with Tableau, Cytoscape, Gephi, Many Eyes, GGobi, Dia, and many research prototypes.

Spoken Languages: Native English speaker, four courses of undergraduate Spanish.

Citizenship: United States.