ALEX GODWIN, PhD

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EDUCATION

The Georgia Institute of Technology   **July 2018**
PhD in Human-Centered Computing, School of Interactive Computing
Information Interfaces Group

The University of North Carolina at Charlotte   **Dec 2008 (MS)**
MS and BS (Magna Cum Laude) in Computer Science, Minor in Cognitive Science   **Dec 2006 (BS)**
Master's Thesis: "Time Web: Comparing Unevenly-Spaced Time Sequences using Social Network Analysis of Local
    Alignment Pairs"

EXPERIENCE

Assistant Professor—Computer Science Department, American University   **Aug 2018–Present**
Designing and teaching active learning courses in Computer Science
Pursuing research in visualization and human-computer interaction
Mentoring undergraduate and graduate researchers in research methods

Research Assistant—to Professor John Stasko, Information Interfaces Group, Georgia Tech   **Aug 2013–July2018**
Researching and designing visualization systems for sketch-based interaction with maps
Designed and taught an active learning undergraduate course in Information Visualization
Designed and developed web interface for safety information on pedestrian routes in Atlanta
Designed and developed tangible user interface for multidimensional data analysis

Scientist III—Cognitive Systems Division, Charles River Analytics, Cambridge, MA   **Feb 2009–Aug 2013**
Researched and designed user interfaces and visualizations for data analytics
Designed, executed, and published experimental protocols to validate research goals
Researched and wrote grant proposals—individually awarded over $1.8 million in funds
Managed a team of 3-5 Software Engineers, Scientists, and Interns

Research Assistant—to Professor Robert Kosara, Visualization Center, UNC Charlotte   **2008**
Developed visual analytics system for entity comparison using sequence comparison algorithms (Time Web)
Integrated application into larger analysis system using client/server network protocols

Graduate Summer Intern—to Dr. Mark Livingston, Naval Research Lab, Washington, DC   **Summer 2008**
Created visualization software library for analysis of multidimensional geographic events
Integrated multiple views for use in a tiled, multi-monitor display

Part-Time Instructor—Central Piedmont Community College, Simulation and Game Design, Charlotte, NC   **Spring 2007**
Game Engine Design—Taught advanced course in developing tools for 3D games
Computer Science 1 & 2—Introductory programming of 2D and 3D graphics
Artificial Intelligence—Modeling search algorithms and intelligent systems in games

Research Assistant—to Professor Tiffany Barnes, Future Computing Lab, UNC Charlotte   **2005–2006**
Created 3D games for the instruction of introductory computer science classes at the college level
Proctored IRB-approved user studies and helped evaluate results

Teaching Assistant—to Professor Tiffany Barnes "Hallym Intensive Summer Gaming Program," UNC Charlotte   **Summer 2005, 2006**
Assisted in teaching course in 3D game development using 3D Gamestudio

AWARDS

Travel Grant to IEEE VIS Doctoral Colloquium	**2017**
Travel Grant to Worcester Polytechnic Institute Faculty Launch Workshop, Worcester, MA	**2017**
Best Paper Nominee at Hawaii International Conference on System Sciences (HICSS)	**2017**
Travel Grant to SIGCSE New Educator's Workshop, Memphis, TN	**2016**
Best Poster Honorable Mention at IEEE International Conference on Visualization (VIS)	**2015**
Data Science for Social Good Summer Fellowship	**Summer 2014**

Georgia Institute of Technology President's Fellowship	**2013**
Best Student Poster at IEEE Symposium on Visual Analytics Science and Technology (VAST)	**October 2008**
UNC Charlotte 8th Annual Graduate Research Fair Across the Disciplines: 1st place in Computer Science	**Spring 2008**
Research Experiences for Undergraduates, UNC Charlotte	**Summer 2006**
Students and Technology in Academia, Research, and Service (STARS), UNC Charlotte	**June–Dec 2006**

PUBLICATIONS

Godwin, A. **Paths Through Spatial Networks**. Proceedings of the IEEE International Conference on Visualization (VIS), 2022 [To appear]

Rosen, J., Zhang, J., and Godwin, A. **Visualization for On and Off the Rails: Train Commuting Dashboards for DC**. Proceedings of the IEEE International Conference on Visualization (VIS), 2022 [Poster, To appear]

Goodwin, S., Meier, S., Bartram, L., Godwin, A., Nagel, T., and Dork, M., **Unravelling the Human Perspective and Considerations for Urban Data Visualization**, Proceedings of the IEEE 14th Pacific Visualization Symposium (PacificVIS), 2021

Zhang, X., Godwin, A., and Stasko, J. **Equity Monitor: Visualizing Attributes of Health Inequity in Atlanta**, Proceedings of the IEEE International Conference on Visualization (VIS), 2017 [**Poster**]

Godwin, A., Wang Y., and Stasko, J. "**TypoTweet Maps: Characterizing Urban Areas through Typographic Social Media Visualization**" (Short paper), Proceedings of EuroVis '17, June 2017, pp. 25-29

Godwin, A. and Stasko, J, "**Nodes, Paths, and Edges: Using Mental Maps to Augment Crime Data Analysis in Urban Spaces**" (Short paper), Proceedings of EuroVis '17, June 2017, pp. 19-23

Godwin, A. and Stasko, J. **HotSketch: Drawing Police Patrol Routes among Spatiotemporal Crime Hotspots.** Proceedings of the 50th Annual Hawaii International Conference on System Sciences, 2017 **[Best Paper Nominee]**

Godwin, A. **Let's Play: Design Games and Other Strategies for Introducing Visualization through Active Learning.** Pedagogy of Data Visualization Workshop at IEEE VIS, 2016

O'Connell, K., Lee, Y., Peer, F., Staudaher, S. M., Godwin, A., Madden, M., and Zegura, E. **Making Public Safety Data Accessible in the Westside Atlanta Data Dashboard.** Bloomberg Data for Good Exchange. arXiv preprint arXiv:1609.09756, 2016.

Godwin, A. and Stasko, J. **Drawing Data on Maps: Sketch-Based Spatiotemporal Visualization**, Proceedings of the IEEE International Conference on Visualization (VIS), 2015 **[Poster, Honorable Mention]**

Godwin, A., Sainath, A., Jayakumar, S. O., Nabhi, V., Raut, S., & Stasko, J. **Exploring Spatio-Temporal Data as Personal Routes**, Proceedings of the IEEE International Conference on Visualization (VIS), 2014 **[Poster]**

Kilgore, R., Godwin, A., Davis, A., & Hogan, C. **A Precision Information Environment (PIE) for Emergency Responders**, IEEE International Conference on Technologies for Homeland Security, 2013 **[Poster]**

Godwin, A., Kilgore, R., and Kudryavtsev, D. **Adaptive Skill Rehearsal and Experimentation Environment for Battlefield First-Aid Procedure Training**, The 55th Annual Meeting of the Human Factors and Ergonomics Society (HFES 2011), 2011

Godwin, A. and Kilgore, R. **Conveying Network Features in Geospatial Battlespace Displays,** IEEE Symposium on Visual Analytics Science and Technology (VAST), 2010 **[Poster]**

Dudzic, S., Godwin, A., and Kilgore, R. **Visualization of Temporal Relationships within Coordinated Views,** IEEE Symposium on Visual Analytics Science and Technology (VAST), 2010 **[Poster]**

Kilgore, R., and Godwin, A. **Pictorial Mnemonic-Based Tools for Procedural Training: Application to the Battlefield First-Aid Domain**, The 54th Annual Meeting of the Human Factors and Ergonomics Society (HFES 2010), 2010

Dudzic, S., Godwin, A., and Kilgore, R. **Visual Strategies for Enhancing User Perception of Task Relationships in Emergency Operations Centers**, Proceedings of SPIE Defense, Security & Sensing, vol. 7692, Orlando, FL, 2010

Decker, J., Godwin, A., Livingston, M. A., and Royle, D. **A Scalable Architecture for Visual Data Exploration**. IEEE Symposium on Visual Analytics Science and Technology (VAST), 2009. **[Poster]**

Chang, R., Kosara, R., Godwin, A., and Ribarsky, W. **Towards A Role of Visualization in Social Modeling**, Symposium on Technosocial Predictive Analytics (AAAI CPA), 2009

Godwin, A. **Time Web: Comparing Unevenly-Spaced Time Sequences using Social Network Analysis of Local Alignment Pairs**, University of North Carolina at Charlotte, 2008 **[Master's Thesis]**

Godwin, A., Chang, R., Kosara, R., and Ribarsky, W. **Interactive Poster: Visual Data Mining of Unevenly-Spaced Event Sequences**, IEEE Symposium on Visual Analytics Science and Technology (VAST), 2008 **[Best Student Poster]**

Ziemkiewicz, C., Wang, X., Godwin, A., Dou, W., Chang, R., Kosara, R., and Ribarsky, W. **Global Terrorism Data Visualization**, The 2nd Annual Department of Homeland Security University Network Summit, 2008 **[Poster]**

Godwin, A., Chang, R., Kosara, R., Ribarsky, W. **Visual Analysis of Entity Relationships in Global Terrorism Database**, SPIE Defense and Security, 2008

Barnes, T., Richter, H., Powell, E., Chaffin, A. and Godwin, A., 2007, June. **Game2Learn: building CS1 learning games for retention**. In ACM SIGCSE Bulletin (Vol. 39, No. 3, pp. 121-125). ACM.

Godwin, A., and Barnes, T. **Global MMORPG Design**, 1st Annual State of North Carolina Undergraduate Research Symposium, 2005 **[Poster]**

SELECTED GRANTS

[Co-PI] Collaborative Research: HNDS-I: A global seafood trade network database for sustainable food systems, human health, and nutrition security	**NSF-BCS**	**2021**
[Co-Author] REU Site: Civic Data Science	**NSF**	**2017**
[Tech Lead] Tangible trustworthiness for mixed-initiative network defense (T2-MIND)	**Air Force**	**2012**
[Tech Lead] Dynamic Information Environment for Coordinated Attribution of Symbol Traits (DIE-CAST)	**DHS**	**2011**
[Tech Lead] Precision Information Environment for Collaborative Emergency Support (PIECES)	**DHS**	**2011**
[Tech Lead] Pictorial Representations of Medical Procedures to Train for Effective Recall (PROMPTER)	**Army**	**2010**
[PI] VIsual Representation Toolkit for Integrated, Goal-Oriented Awareness (VIRTIGO)	**Air Force**	**2010**

SKILLS AND LANGUAGES

Java, JavaScript, D3, CSS+HTML5, Processing, Python, PHP, PostgreSQL, R, Adobe Creative Suite, Microsoft Office

RECENT PROJECTS

Typographic Tweet Maps. A technique for constructing representations of neighborhood topics as typographic maps. TypoTweet Maps show differences in neighborhood topics using only text, avoiding the channel interference of feature labels that are unnecessary for residents who are familiar with the shape of the city. 2016–Present

Mental Maps. A technique for using mental maps to improve public participation in GIS. These elements can be used to augment quantitative data analysis in urban spaces by incorporating the qualitative values and knowledge of citizens. 2016–Present

SpaceSketch. Sketch-based spatiotemporal data analysis tool built for stylus and multitouch displays. SpaceSketch lets you interact with maps on a computer screen much like you would with traditional pen and paper. 2014–Present

Emergency 911 Dispatch. Dashboard visualization tool for comparing the distribution of calls and response times throughout the city of Atlanta. This work was completed as part of the Data Science for Social Good (DSSG) program. Summer 2014.

SERVICE

Co-Chair, CityVis 2019 Workshop, CityVis 2022 Workshop and Competition

Program Committee, ACM SIGCHI Late Breaking Work (LBW) 2018

Reviewer, ACM SIGCHI, TVCG, CG&A, IEEE VIS, EuroVIS, Pacific VIS, HICSS, IDEA,

Vice President of Graduate Student Council
Georgia Tech School of Interactive Computing, 2016-2018
PhD Student Recruiting Weekend Co-lead

Data Science for Social Good, Program Advisor, 2015–2018

Faculty Hiring Committee, Georgia Tech
School of Interactive Computing, 2013

Community Emergency Response Team (CERT),
Brookline, MA, 2011–2013

Human Factors and Ergonomics Society, New England Chapter
President, 2012–2013
Vice President, 2011
Program Committee Chair, 2010

AI for Serious Games Workshop, Co-Organizer, held at The Eighth AAAI Artificial Intelligence and Interactive (AIIDE-12), 2012

IEEE VisWeek (VIS), Student Volunteer, 2008

IEEE Virtual Reality (VR), Student Volunteer, 2006, 2007

ACM SIGGRAPH Sandbox Symposium, Student Volunteer, 2006

Students and Technology in Academia, Research, and Service (STARS), Research Volunteer, 2006

TEACHING

American University

CSC 484/684: Legal and Ethical Issues in Computer Science. Instructor. An upper-level CORE (W2) required course in sociotechnical ethics, rhetoric, and writing at American University. Spring '21, '22.

CSC 485/686: Introduction to Information Visualization. Upper-level elective in visualization, HCI, and Data Science. Instructor at American University, Spring '19, '20, '21, '22

CSC 485/686: Software Engineering. Upper-level elective in principles of code design, implementation, and project management. Instructor at American University, Spring '19, '20, '21, '22

CSC 281: Introduction to Computer Science II: Intermediate level course in object-oriented programming, data structures, and algorithms. AU CORE required course in Quantitative Literacy (Q2). American University, Multiple semesters 2018 - present

Georgia Institute of Technology

CS 4001: Computing, Society, and Professionalism. Instructor. Fall, 2017. A senior level required course in sociotechnical ethics, rhetoric, and writing.

CS 4460: Introduction to Information Visualization. Instructor. Summer, 2015 & 2017. A third or fourth-year elective undergraduate course.

CS 7450: Information Visualization. Teaching Assistant. Fall, 2014. An elective graduate course for MS and PhD students.

Central Piedmont Community College

SGD 113: Simulation and Game Programming. Instructor. Spring, 2007. Introduction to programming concepts through topics in game design. A first-year introductory computer science course at the undergraduate level.

SGD 213: Simulation and Game Programming II. Instructor. Spring, 2007. Introduction to programming concepts through topics in game design. A first-year advanced introductory computer science course at the undergraduate level.

SGD 125: Artificial Intelligence for Simulation and Games. Instructor. Spring, 2007. Introduction to artificial intelligence concepts through topics in game design. A second-year elective undergraduate course.

SGD 126: Engine Design for Simulation and Games. Instructor. Spring, 2007. Introduction to linear algebra and graphics concepts necessary for 3D rendering. A second-year elective undergraduate course.