Stephen J. Guy
Associate Professor, University of Minnesota
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A. Professional Preparation

B.S.	Computer Engineering	University of Virginia	Charlottesville, VA	2006
M.S.	Computer Science	University of North Carolina	Chapel Hill, NC	2009
Ph.D.	Computer Science	University of North Carolina	Chapel Hill, NC	2012

B. Appointments

2018 – present	Associate Professor	University of Minnesota	Minneapolis, MN
2012 – 2018	Assistant Professor	University of Minnesota	Minneapolis, MN

C. Products

Relevant Publications

1. Z. Chavis, HS. Park, and S. J. Guy. "Simultaneous Localization and Affordance Prediction for Tasks in Egocentric Video." In *IEEE International Conference on Robotics and Automation (ICRA)*, 2025.
2. S. Ziccardi, S. Timanus, G. Ashrafzadehkian, S. J. Guy, and R. L. Hawe. "Characterization of Bilateral Reaching Development Using Augmented Reality Games." *Human Movement Science*, 2024.
   doi:10.1016/j.humov.2024.103254
3. N. Sohre and S. J. Guy. "SPNets: Human-like Navigation Behaviors with Uncertain Goals." In *Motion, Interaction and Games (MIG)*, 2020.
   doi:10.1145/3424636.3426911
4. Julio Godoy}, Stephen J. Guy, Maria Gini, and Ioannis Karamouzas. "C-Nav: Distributed Coordination in Crowded Multi-Agent Navigation." In *Robotics and Autonomous Systems*, 2020./
   doi:10.1016/j.robot.2020.103631
5. N. Sohre, M. Adeagbo, N. E. Helwig, S. Lyford-Pike and S J. Guy. "PVL: A Framework for Navigating the Precision-Variety Trade-off in Automated Animation of Smiles." In *Association for the Advancement of Artificial Intelligence (AAAI)*, 2018.
   doi:10.1609/aaai.v32i1.11431

Significant Publications

1. B. Davis, I. Karamouzas, and S. J. Guy. "NH-TTC: A gradient-based framework for generalized anticipatory collision avoidance." In *Robotics Science and Systems (RSS)*, 2020.
   doi:10.15607/RSS.2020.XVI.078
2. I. Karamouzas, N. Sohre, R. Hu, and S. J. Guy. "Crowd Space: A Predictive Crowd Analysis Technique." *ACM Transactions on Graphics (SIGGRAPH Asia)*, 2018.
   doi:10.1145/3272127.3275079
3. I. Karamouzas, N. Sohre, Rahul Narain, and S. J. Guy. "Implicit Crowds: Optimization Integrator for Robust Crowd Simulation." *ACM Transactions on Graphics (SIGGRAPH)*, 2017.
   doi:10.1145/3072959.3073705
4. I. Karamouzas, B. Skinner, and S. J. Guy. "Universal power law governing pedestrian interactions." *Physical Review Letters (PRL)*, 113(23). 238701, APS, 2014.
   doi:10.1103/PhysRevLett.113.238701
5. S. J. Guy, J. van den Berg, W. Liu, R. Lau, M. C. Lin, and D. Manocha. "A statistical similarity measure for aggregate crowd dynamics." *ACM Transactions on Graphics (SIGGRAPH Asia)*, 2012.
   doi:10.1145/2366145.2366209

Synergistic Activities

1. **Undergraduate Mentoring.** I have worked with dozens of undergraduate students in targeted research programs designed to increase participation in research activities. This includes supervising many students through the NSF REU program and other national undergraduate research programs.
2. **Senior Editorial Duties.** I have served as Area Chair, Senior Editor, or Senior Program Committee member for a variety of conferences in Computer Vision, Robotics, and AI including IEEE Robotics and Automation Letters (RA-L), AAAI, CVPR, IJCAI, and AAMAS.
3. **Public Education.** I have contributed to various educational activities targeted at both industry and the general public, including contributing to the book *Game AI Pro*, speaking on AI at the Game Developers Conference (GDC), and maintaining a technical YouTube channel focused on programming and scientific education.
4. **Software.** I help maintain various software related to navigation and collision avoidance, including the ORCA/RVO2 library and the TTC Forces Python simulation library. ORCA, in particular, has been widely used in both industry and academia.