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Academic Interests

Evolutionary dynamics on complex networks, coding, pedagogy

Other Interests

Being present, books, food, music, travel

Education



Employment History

2021 -	Senior Lecturer I, Computer Science Department, University of Massachusetts Boston
2014 – 2021	Lecturer, Computer Science Department, University of Massachusetts Boston
2013 – 2014	Postdoc, Physics Department, University of Massachusetts Boston
2001 – 2006	Product Developer, BMC Software
1997 – 1998	Software Engineer, Tata Interactive Systems

Publications

Books

B. Campbell, S. Iyer, and B. Akbal-Delibaş, An Introduction to Compiler Construction in a Java World. CRC Press, 2012. *O* URL: https://www.amazon.com/dp/1439860882/.

Papers

F. Pourhasanzade, S. Iyer, J. Tjendra, L. Landor, and S. Våge, "Individual-based model highlights the importance of trade-offs for virus-host population dynamics and long-term co-existence," *PLoS Computational Biology*, vol. 18, no. 6, 2022. *O* URL: https://doi.org/10.1371/journal.pcbi.1010228.

S. Iyer and T. Killingback, "Evolution of Cooperation in Social Dilemmas with Assortative Interactions," *Games*, vol. 11, no. 4, 2020. *O* URL: https://doi.org/10.3390/g11040041.

- S. Iyer and T. Killingback, "Evolution of Cooperation in Social Dilemmas on Complex Networks," *PLoS Computational Biology*, vol. 12, no. 2, 2016. *O* URL: https://doi.org/10.1371/journal.pcbi.1004779.
- S. Iyer and T. Killingback, "Evolutionary Dynamics of a Smoothed War of Attrition Game," *Journal of Theoretical Biology*, vol. 396, pp. 25–41, 2016. *O* URL: https://doi.org/10.1016/j.jtbi.2016.02.014.

S. Gazda, S. Iyer, T. Killingback, R. Connor, and S. Brault, "Network-based Analysis of Activity Patterns in Bottlenose Dolphins (Tursiops Truncatus) in Cedar Key, Florida," *Royal Society Open Science*, vol. 2, no. 3, 2015. *O* URL: https://doi.org/10.1098/rsos.140263.

S. Iyer and T. Killingback, "Evolutionary Dynamics of the Traveler's Dilemma and Minimum Effort Coordination Games on Complex Networks," *Physical Review E*, vol. 90, no. 4, 2014. *O* URL: https://doi.org/10.1103/PhysRevE.90.042134.

 S. Iyer, J. Reyes, and T. Killingback, "An Application of Evolutionary Game Theory to Social Dilemmas: The Traveler's Dilemma and the Minimum Effort Coordination Game," *PLoS ONE*, vol. 9, no. 4, 2014.
 URL: https://doi.org/10.1371/journal.pone.0093988.

S. Iyer, T. Killingback, B. Sundaram, and Z. Wang, "Attack Robustness and Centrality of Complex Networks," *PLoS ONE*, vol. 8, no. 4, 2013. *O* URL: https://doi.org/10.1371/journal.pone.0059613.

S. Iyer and D. Simovici, "Structural Classification of XML Documents Using Multisets," *International Journal on Artificial Intelligence Tools*, vol. 17, no. 5, pp. 1003–1022, 2008. *O* URL: https://www.cs.umb.edu/~siyer/research/multisets_long.pdf.

10 S. Iyer and D. Simovici, "Multisets and Clustering XML Documents," in *Proceedings of the 19th International Conference on Tools with Artificial Intelligence*, Patras, Greece, 2007. *O* URL: https://www.cs.umb.edu/~siyer/research/multisets_short.pdf.

Posters

- F. Pourhasanzade, S. Iyer, J. Tjendra, and S. Våge, "Individual-based model highlights the importance of trade-offs in shaping bacteria-phage co-evolutionary dynamics," 2021. *O* URL: https://www.cs.umb.edu/~siyer/research/aslo_poster1.pdf.
- R. Fiolek, S. Iyer, and T. Killingback, "Complex Network Topologies Resilient to Centrality Attack," 2016. *O* URL: https://www.cs.umb.edu/~siyer/research/evolving_network_poster.pdf.

3 S. Iyer, R. Moray, P. Kulkarni, R. Kulkarni, and K. Zarringhalam, "A Machine Learning Approach for Identifying the PTEN Non-coding ceRNA Network," 2014. *O* URL: https://www.cs.umb.edu/~siyer/research/cerna_poster.pdf.

S. Gazda, S. Iyer, T. Killingback, R. Connor, and S. Brault, "Network Analysis by Activity Reveals Community Overlap and Differences in Centrality of Individuals in Bottlenose Dolphins (Tursiops Truncatus) in Cedar Key, Florida," 2011. URL: https://www.cs.umb.edu/~siyer/research/dolphins_poster2.pdf.

5 C. Ciarfella, S. Gazda, S. Iyer, S. Brault, and T. Killingback, "Residency Patterns and Social Structure of Bottlenose Dolphins," 2010. *O* URL: https://www.cs.umb.edu/~siyer/research/dolphins_poster1.pdf.

PhD Thesis



S. Iyer, *Evolutionary Dynamics on Complex Networks*, 2013. **9** URL: https://scholarworks.umb.edu/doctoral_dissertations/113.

Awards 2017 Hjort Scholar Award, Hjort Centre for Marine Ecosystem, Bergen, Norway 2016 Joseph P. Healey Research Grant, University of Massachusetts Boston 2013 Outstanding Achievement in Computer Science Award, University of Massachusetts Boston 2007 Student Leadership Award, University of Massachusetts Boston Mentoring

Graduate Students, University of Massachusetts Boston

Alexander Zhurkevich. EFS: An Efficient, Fast, and Scalable Semantic Segmentation Pipeline 2021 Using TensorFlow 2. Jason Held. A Neural Network Model for Classifying Bubble-based Instructor Evaluations, 2017 - 2018 and an Accompanying Web Portal. Jeff Amari, Jason Curran, Divyansh Dhakre, Kinjalk Parmar, Nikhil Sidhwani, and Tory 2016 - 2017 Wheelwright. Web-based Visualizations of Algorithms. Timothy Cronin, Pragna Gopal, Joelle Skaff, and Keith Wright. Visual MMIX. 2007 - 2008 Saaid Baraty, Dhriti Dave, Glenn Hoffman, and Madhavi Tolety. Visual Parser. 2002 - 2003 Undergraduate Students, University of Massachusetts Boston 2024 Ethan Luvisia. Visualizing Music using Music21 and Manim Libraries 2021 Roy Varon Weinryb. Detecting Audio with AI. Joyce Quach. Implementation of Algorithms from Introduction to Compiler Construction in 2020 - 2021 a Java World. Rachel Fiolek. Complex Network Topologies Resilient to Centrality Attack. 2015 - 2016 Paola Leon Alarcon. Effect of Vaccination on Epidemic Spread on Complex Networks. Kai Ching Lam, Vy Thao Nguyen, Vy Thuy Nguyen, and Matthew H. Santaguida. Tokana-2013 grammar - A Jigsaw Puzzle for Nerds.

Service

Computer Science (CS) Department, University of Massachusetts Boston

2019 – 2021 📕 Paul English scholarship committee

Service (continued)



College of Science and Mathematics (CSM), University of Massachusetts Boston

2024 -	CSM senate
2023 -	College personnel committee for NTT promotions
2022 -	SI/LA proposal committee
2021 - 2022	Advising, counseling, and supporting committee
2019 -	GRE (Math section) workshop for McNair fellows
2015 – 2020	CSM scholarship committee
2015	Open house event for undergraduates
2015, 2022, 2023	Welcome day event for undergraduates