Brian W. Goldman

Curriculum Vitae

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Education

- 2015 Doctor of Philosophy in Computer Science & Engineering, Michigan State University
  - Dissertation Advisor: Dr. William F. Punch, GPA: 4.0/4.0
  - Dissertation: Out of the Box Optimization using the Parameter-less Population Pyramid
- 2012 Master of Science in Computer Science, Missouri University of Science & Technology
  - Thesis Advisor: Dr. Daniel R. Tauritz, GPA: 4.0/4.0
  - Thesis: Robust Evolutionary Algorithms
- 2010 Bachelor of Science in Computer Science, Missouri University of Science & Technology
  - Minor in Mathematics, GPA: 3.84/4.0 in major, 3.81/4.0 overall

Academic Positions

- Research Assistant Professor, Colorado State University. Starting Spring 2016.
- Postdoc, Hintze Lab, Michigan State University. Fall 2015.
- Advanced Computing Solutions Program, Los Alamos National Laboratories. Summer 2012.
- Center for Cyber Defenders, Sandia National Laboratories. Summer 2011.

Awards

- Nominated Best Paper - Genetic Algorithms Track for GECCO 2015 “Gray Box Optimization using the Parameter-less Population Pyramid”
- Best Paper - Genetic Algorithms Track for GECCO 2014 “Parameter-less Population Pyramid”
- Received travel and proposal funding through BEACON NSF STC 2013–2015.
- Voted 2012 Leader of the Year, Missouri S&T Computer Science Department
- Google AI challenge, ranked 25^{th} out of 4619 world wide, 6^{th} in USA, 2010
- Missouri S&T Human versus Computer chess tournament, two first place AIs, 2009 and 2011

Activities

- Co-chair, 2016 Genetic Programing Theory and Practice Conference
- Co-chair, GECCO 2015–present Combinatorial Black Box Optimization Competition
- Peer Reviewer, IEEE Transactions on Evolutionary Computation Journal 2014–present
- Peer Reviewer, Genetic Programming and Evolvable Machines 2014–present
- Founder and organizer, Computational Evolution Discussion Group October 2013–2015
- Program Committee Member, GECCO 2012–present Genetic Algorithms Track
- Chair of ACM SIG for AI competition game development (SIG-Game), 2011–2012

Teaching Experience

- Evolutionary Computation, Fall 2014 and Fall 2015. Guest Lecturer for graduate level course.
- Introduction to Programming II, Summer 2014. Lead instructor for C++11 course. In charge of lecturing, creating course content, and assessments for 37 students. Managed two graduate assistants who taught lab sections and graded assignments. Received 3.81/4 student evaluation.
- Introduction to Programming II, Fall 2013 – Spring 2014. Primary instructor for lab section.
- Object Oriented Numerical Methods, Spring 2012. Teaching assistant for upper level intensive C++ course.
- Introduction to C++ Lab, Spring 2011 – Fall 2011. Primary instructor for lab section.
- Parallel Computing, Spring 2011. Teaching assistant for upper level course.
- Evolutionary Computation, Fall 2010. Teaching assistant for upper level course.

Publications (13 Total)

Journal Articles

1. Goldman, B. W. and W. F. Punch (2015). Analysis of Cartesian Genetic Programming's Evolutionary Mechanisms. *IEEE Trans. Evolutionary Computation* **19**(3), 359–373.
2. Goldman, B. W. and W. F. Punch (2015). Fast and Efficient Black Box Optimization using the Parameter-less Population Pyramid. *Evolutionary computation* **23**(3), 451–479.
3. Lehmann, K., B. W. Goldman, I. Dworkin, D. M. Bryson, and A. P. Wagner (2013). From cues to signals: evolution of interspecific communication via aposematism and mimicry in a predator-prey system. *PloS one* **9**, e91783.
4. White, D. R., J. McDermott, M. Castelli, L. Manzoni, B. W. Goldman, G. Kronberger, W. Jaskowski, U.-M. O'Reilly, and S. Luke (2013). Better GP benchmarks: community survey results and proposals. *Genetic Programming and Evolvable Machines* **14**(1), 3–29.

Refereed Conference Papers

1. Goldman, B. W. and W. F. Punch (2015). Gray-Box Optimization using the Parameter-less Population Pyramid. In: *Genetic and Evolutionary Computation Conference*. ACM, pp.855–862.
2. Goldman, B. W. and W. F. Punch (2014). Parameter-less population pyramid. In: *Genetic and Evolutionary Computation Conference*. Vancouver, BC, Canada: ACM, pp.785–792.
3. Goldman, B. W. and W. F. Punch (2013). Length Bias and Search Limitations in Cartesian Genetic Programming. In: *Genetic and Evolutionary Computation Conference*. Amsterdam, The Netherlands: ACM, pp.933–940.
4. Goldman, B. W. and W. F. Punch (2013). Reducing Wasted Evaluations in Cartesian Genetic Programming. In: *European Conference on Genetic Programming*. Vol. 7831. LNCS. Vienna, Austria: Springer Verlag, pp.61–72.
5. Kamrath, N. R., B. W. Goldman, and D. R. Tauritz (2013). Using supportive coevolution to evolve self-configuring crossover. In: *Genetic and Evolutionary Computation Conference Companion*. Amsterdam, The Netherlands: ACM, pp.1489–1496.
6. Goldman, B. W. and D. R. Tauritz (2012). Linkage tree genetic algorithms: variants and analysis. In: *Genetic and Evolutionary Computation Conference*. Philadelphia, Pennsylvania, USA: ACM, pp.625–632.
7. Goldman, B. W. and D. R. Tauritz (2012). Supportive coevolution. In: *Genetic and Evolutionary Computation Conference Companion*. Philadelphia, Pennsylvania, USA: ACM, pp.59–66.
8. Goldman, B. W. and D. R. Tauritz (2011). Self-configuring crossover. In: *Genetic and Evolutionary Computation Conference Companion*. Dublin, Ireland: ACM, pp.575–582.

Conference Posters

1. Goldman, B. W. and D. R. Tauritz (2011). Meta-evolved empirical evidence of the effectiveness of dynamic parameters. In: *Genetic and Evolutionary Computation Conference Companion*. Dublin, Ireland: ACM, pp.155–156.