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EDUCATION	<b>The University of Maryland</b> , College Park, MD Ph.D. in Computer Science, November 2011 <ul style="list-style-type: none"><li>– Advisor: James A. Reggia</li><li>– Dissertation Title: A Neurocomputational Model of Grounded Language Comprehension and Production at the Sentence Level</li><li>– Larry S. Davis Doctoral Dissertation Award</li><li>– ACM Doctoral Dissertation Award Nomination</li><li>– Neuroscience and Cognitive Science program certificate</li><li>– Language Science NSF IGERT Fellowship</li><li>– Cumulative GPA: 4.0</li></ul> M.S. in Computer Science, May 2009 <ul style="list-style-type: none"><li>– Advisor: James A. Reggia</li><li>– Concentrations: Artificial Intelligence, Machine Learning, Natural Language</li><li>– Cumulative GPA: 4.0</li></ul> <b>The University of Iowa</b> , Iowa City, IA B.S. degrees in Computer Science and Mathematics, May 2005 <ul style="list-style-type: none"><li>– <i>Summa Cum Laude</i> with Honors Commendation</li><li>– Cumulative GPA: 4.0</li><li>– GRE Scores: 800 Math, 800 Verbal, 5.0 Writing</li></ul>	
RESEARCH EXPERIENCE	<b>Postdoctoral Research Fellow</b> / January 2012 to Present University of Maryland College Park, Computer Science <ul style="list-style-type: none"><li>– Advanced a theory of symbolic computation arising in distributed neural systems.</li><li>– Designed and tested a new neural network method for collective classification.</li><li>– Developed a neural network method for inference in relational databases.</li></ul> <b>Graduate Research Assistant</b> / January 2011 to December 2011 to William Rand, University of Maryland College Park, Marketing and Computer Science <ul style="list-style-type: none"><li>– Built a reusable tool for long-term data mining from Twitter Streaming API.</li><li>– Collected a dataset of 35M music album tweets and sales trends in MySQL.</li><li>– Modeled tweet and sentiment data to predict ranks of albums on Billboard charts.</li></ul> <b>Graduate Research Fellow</b> / August 2008 to August 2010 in Language Diversity IGERT Program, University of Maryland College Park <ul style="list-style-type: none"><li>– Led an interdisciplinary research project on age effects in second languages.</li><li>– Processed entire contents of Wikipedia in two languages to form a dataset.</li><li>– Designed a neural network model of bilingual acquisition of grammatical gender.</li></ul> <b>Graduate Research Assistant</b> / January 2007 to August 2008 to James A. Reggia, University of Maryland College Park, Computer Science <ul style="list-style-type: none"><li>– Derived the LSTM-g learning rule for second-order recurrent neural networks.</li><li>– Designed neural networks that learned about language and meaning.</li></ul>	

- Developed neural networks to understand and answer questions in English.

**Undergraduate Scholar Assistant** / August 2003 to May 2005

in University of Iowa, High Energy Physics Lab

- Programmed software to simulate physics interactions in particle detectors.
- Performed quality-assurance tests on equipment designed for CERN's LHC.

**Honors Research Assistant** / August 2004 to December 2004

to Cesare Tinelli, University of Iowa, Computer Science

- Learned about the propositional satisfiability problem and the DPLL algorithm.
- Designed and implemented an XOR-solving plug-in for the SAT-solver DPLL(T).
- Evaluated work statistically through extensive performance testing and analysis.

**Honors Research Assistant** / January 2003 to May 2003

to Sriram Pemmaraju, University of Iowa, Computer Science

- Learned about functional programming, Mathematica, and graph theory.
- Re-designed and implemented an algorithm for computing graph isomorphism.
- Extensively tested the new algorithm to determine strengths and weaknesses.

TEACHING  
EXPERIENCE

**Private Tutor** / May 2005 to Present

for dozens of students ranging from high school to graduate school

- Developed personalized lessons and projects to play to each student's interests.
- Gained experience teaching discrete math, data structures, algorithms, programming language concepts, and artificial intelligence.

**Graduate Teaching Assistant** / August 2010 to December 2010

to Jeff Hollingsworth, University of Maryland College Park, Computer Science

- Graded programming projects/exams for course in high-performance computing.
- Tested and wrote instructions for programming projects for the course.
- Fielded student questions via email and in person during office hours.

**Graduate Teaching Assistant** / August 2010 to December 2010

to James A. Reggia, University of Maryland College Park, Computer Science

- Graded homework, quizzes, and exams for introductory AI course.
- Interacted with students during office hours and via email.

**Graduate Teaching Assistant** / August 2006 to December 2006

to Fawzi Emad, University of Maryland College Park, Computer Science

- Led a lab/discussion of 20+ students for a Java programming course, twice weekly.
- Graded homework, quizzes, projects, and exams.
- Solved student problems during office hours.

SELECTED  
PROFESSIONAL  
EXPERIENCE

**Systems Engineer** / May 2005 to May 2006

for Rockwell Collins, Cedar Rapids, IA

- Designed flight management and navigation systems for military aircraft.
- Developed and executed test suites to verify correctness/robustness of systems.
- Increased office efficiency by automating common or repetitive tasks.

**Summer Engineering Project Intern** / May 2004 to August 2004

for Rockwell Collins, Cedar Rapids, IA

- Wrote requirements for a comprehensive Eclipse plug-in to automate peer review.
- Designed and implemented the plug-in with a team of other interns.
- Gained experience with relational databases, CVS, and Eclipse development.

JOURNAL  
PUBLICATIONS

- D. Monner and J. A. Reggia. Recurrent neural collective classification. Under review for the journal *IEEE Transactions on Neural Networks and Learning Systems*. [PDF]
- D. Monner, K. Vatz, G. Morini, S. Hwang, and R. DeKeyser (2013). A neural network model of the effects of entrenchment and memory development on grammatical gender learning. *Bilingualism: Language and Cognition* 16(2), 246–265. [PDF]
- D. Monner and J. A. Reggia (2012). Emergent latent symbol systems in recurrent neural networks. *Connection Science* 24(4), 193–225. [PDF]
- D. Monner and J. A. Reggia (2012). Neural architectures for learning to answer questions. *Biologically Inspired Cognitive Architectures* 2, 37–53. [PDF]
- D. Monner and J. A. Reggia (2012). A generalized LSTM-like training algorithm for second-order recurrent neural networks. *Neural Networks* 25, 70–83. [PDF]

CONFERENCE  
PUBLICATIONS

- J. A. Reggia, D. Monner, and J. Sylvester (2013). The computational explanatory gap. To be presented at IACAP 2013.
- A. Grushin, D. Monner, J. A. Reggia, and A. Mishra. Robust Human Action Recognition via Long Short-Term Memory. To be presented at IJCNN 2013.
- D. Monner, W. Rand, and Y. Joshi. Predicting the Charts: Using Big Data from Social Media to Forecast Market Potential. To be presented at Marketing Science 2013.
- D. Monner and J. A. Reggia (2011). Towards a biologically inspired question-answering neural architecture. In *Proceedings of BICA*, 243–248. Amsterdam: IOS Press. [PDF]
- D. Monner and J. A. Reggia (2011). Systematically grounding language through vision in a deep, recurrent neural network. In *Proceedings of AGI*, 112–121. Springer. [PDF]
- D. Monner and J. A. Reggia (2009). An unsupervised learning method for representing simple sentences. In *Proceedings of IJCNN*, 2133–2140. IEEE. [PDF]
- A. Bender, R. Sherwood, D. Monner, N. Goergen, N. Spring, and B. Bhattacharjee (2009). Fighting spam with the NeighborhoodWatch DHT. In *Proceedings of INFOCOM*, 1755–1763. IEEE. [PDF]

CONFERENCE  
PRESENTATIONS

- D. Monner (2011). Systematically grounding language through vision in a deep, recurrent neural network. Talk presented at BICA, Arlington, VA.
- D. Monner (2011). Towards a biologically inspired question-answering neural architecture. Talk presented at AGI, Mountain View, CA.
- D. Monner (2010). Using neural network models to separate maturational effects from crosslinguistic interference in L2 gender acquisition. Talk presented at SLRF, College Park, MD.
- D. Monner (2009). An unsupervised learning method for representing simple sentences. Poster presented at IJCNN, Atlanta, GA.

TECHNICAL  
REPORTS

D. Monner (2011). *A Neurocomputational Model of Grounded Language Comprehension and Production at the Sentence Level*. Ph.D. Dissertation, University of Maryland College Park. [PDF]

D. Monner and J. A. Reggia (2007). An external tabletop environment for an interactive brain model. CS-TR-4883/UMIACS-TR-2007-41, Dept. of Computer Science, University of Maryland College Park. [PDF]

OPEN SOURCE  
SOFTWARE

XLBP, short for eXtensible Localized Back-Propagation, a Java toolkit for building neural networks for use with the generalized long short-term memory (LSTM-g) training method, among others. [link]

RNCC, short for Recurrence Neural Collective Classification, a Java classification tool that improves performance by utilizing known interdependencies among the entities to be classified, expressed as one or more relationship graphs. [link]

TwEater, short for Twitter Eater, a tool designed to archive long-term Twitter Streaming API queries using files or databases. [link]

INVOLVEMENT

President, Computer Science Graduate Student Executive Council, 2009–2011

IGERT Lunch Talks/Recruitment/Social Events Committee, 2010–2011

IGERT High School Outreach Program, 2009–2011

IGERT Winter Storm Planning Committee, 2009–2011

IGERT Winter Storm Assessment Committee, 2009

Treasurer, Association for Computing Machinery, University of Iowa Chapter, 2003–2005

AWARDS

Intelligence Community Postdoctoral Fellowship, 2012–2013

Larry S. Davis Doctoral Dissertation Award, University of Maryland College Park, Department of Computer Science, 2012

NSF IGERT Fellowship in Computational and Biological Foundations of Language Diversity, 2008–2010

Block Fellowship, University of Maryland College Park, Department of Computer Science, 2006–2008

Allied Insurance Scholarship, 2005

Arthur Collins Scholarship, 2003

University of Iowa Presidential Scholarship, 2001–2005

National Merit Scholarship, 2001