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Ryan J. McCall, Ph.D.

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EMPLOYMENT

Algorithms Intern **Numenta Corporation** **Jan 2015 – Present**

- Designed and performed several machine learning experiments demonstrating feasibility of online learning algorithm measured in terms of representation invariance and distinctness. *Python*
- Implemented two scripts to monitor product database infrastructure for errors and wrote accompanying unit tests. Created database table used by scripts to avoid sending of duplicate notifications. *Python, unittest, SQLAlchemy, MySql*

EDUCATION

Memphis, TN **University of Memphis** **Fall 2007 – Summer 2014**

- Ph.D. in Computer Science, August 2014, GPA: 3.86
- M.S. in Applied Computer Science, Concentration in Cognitive Science, May 2009.
- Coursework: Artificial Intelligence, Neural Networks, Programming Languages, Algorithms, Operating and Distributed Systems, Computational Theory, Software Engineering, Machine Learning

Easton, PA **Lafayette College** **Fall 2003 – May 2007**

- B.S. in Mathematics; Minor in Computer Science, May 2007. GPA 3.47
- Coursework: Algorithms, Computational Theory, Discrete Math, Logic, Software Engineering

TECHNICAL EXPERIENCE

- **Software Framework** (2009 – 2014). Co-designed and co-developed software framework featuring custom task manager and task API for multithreading, custom graph data structure, software design patterns, extensible GUI, logging support, and XML configuration and loading. Performed JUnit testing and profiling of codebase. *Java, JUnit, XML*
- **Machine Learning Algorithms** (2012 – 2014). Developed and implemented extensions to machine learning algorithms adding hierarchy and support for visual data. Designed and performed a dozen experiments of extensions. *Java, XML*
- **Software Agent Simulation** (2012 – 2014). Designed and implemented software agent with motivational subsystem that replicates results of a neuroscience experiment. *Java, XML*

SKILLS

- Oracle Certified Professional Java Programmer, Python, XML (XSD) Schema, Octave, MySql
- Git, Github, Subversion, Eclipse, Pycharm, Netbeans, Numpy

ADDITIONAL EXPERIENCE

- Instructor (Fall 2013): Taught graduate Artificial Intelligence course
- Leader (Fall 2012 – Summer 2014): Research group's computational meeting
- Teaching assistant (Summer 2007): John Hopkins Center for Talented Youth Computer Science course

SELECTED PUBLICATIONS

McCall, R. (2014). *Fundamental Motivation and Perception for a Systems-Level Cognitive Architecture* (Doctoral dissertation).

McCall, R. & Franklin, S. (2013). Cortical Learning Algorithms with Predictive Coding for a Systems-Level Cognitive Architecture. *Second Annual Conference on Advances in Cognitive Systems* (pp. 149–166). Baltimore, MD.

Snaider, J., **McCall, R.**, & Franklin, S. (2011). The LIDA Framework as a General Tool for AGI. *The Fourth Conference on Artificial General Intelligence Springer Lecture Notes in Artificial Intelligence, 6830*, 133–142.