

WHIT SCHONBEIN

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EDUCATION

Ph.D. Computer Science <i>University of New Mexico, Albuquerque, New Mexico</i>	<i>2016-present</i>
M.S. Computer Science (GPA 3.91) <i>University of New Mexico, Albuquerque, New Mexico</i>	<i>2016</i>
Ph.D. Philosophy-Neuroscience-Psychology (GPA 3.842) <i>Washington University, St. Louis, Missouri</i>	<i>2002</i>
B.A. (dual) Computer Science, Philosophy (GPA 3.408) <i>University of Wisconsin, Madison, Wisconsin</i>	<i>1994</i>

PROFESSIONAL EXPERIENCE

R&D Intern <i>Center for Computational Research, Sandia National Laboratories</i>	<i>2017-present</i>
<ul style="list-style-type: none">• Current research topics include challenges facing MPI at exascale, and extending the capacities of high-speed interconnects.	
Research Assistant <i>Dept. of Computer Science, University of New Mexico</i>	<i>2013 - 2017</i>
<ul style="list-style-type: none">• Developed test suites for C, C++, and Fortran Cray Compiler Environment support for OpenMP 4.0 and 4.5 features.• Developed test suite for MPI 3.0 tools interface.• Investigated the performance of tree-based overlay communication networks in HPC environments.• Investigated opportunities for energy savings involving non-blocking MPI collective operations.	
Teaching Assistant <i>Dept. of Computer Science, University of New Mexico</i>	<i>2013 & 2014</i>
<ul style="list-style-type: none">• Discrete mathematics (Fall 2013), Artificial intelligence (Spring 2014)	
Visiting Lecturer <i>Dept. of Philosophy, University of New Mexico, Albuquerque, NM</i>	<i>Fall 2012</i>
Assistant Professor <i>Dept. of Philosophy, College of Charleston, Charleston, SC</i>	<i>2005 - 2012</i>
<ul style="list-style-type: none">• Taught courses on logic, artificial intelligence, philosophy of mind, analytic philosophy, and Honor's western civilization.• Published research on topics at the intersection of computational theory and philosophy of mind.• Designed and supervised undergraduate internship program.• Served on departmental and college committees, including instructional technology, writing, and internal grant review.	
Visiting Assistant Professor <i>Dept. of Philosophy, Mount Holyoke College, South Hadley, MA</i>	<i>2003-2005</i>
Visiting Assistant Professor <i>Dept. of Philosophy, Washington University, St. Louis, MO</i>	<i>2001-2003</i>
Instructor <i>University College at Washington University, St. Louis, MO</i>	<i>1999-2001</i>
<ul style="list-style-type: none">• Taught courses on logic, philosophy of language, philosophy of mind, and introductory philosophy.	
Research Assistant <i>PNP Robot Lab, Washington University</i>	<i>1999-2001</i>
<ul style="list-style-type: none">• Developed neural network and vector field controllers for mobile robots, and supervised undergraduate lab assistants.	
Research Assistant <i>Dept. of Psychology, University of Wisconsin</i>	<i>1992-1994</i>
<ul style="list-style-type: none">• Developed neural network models of past-tense verb acquisition.	

- Schonbein, W.**, Grant, R.E., Dosanjh, M.G.F., Arnold, D. (2019) ‘INCA: In-Network Compute Assistance’, *Proceedings of the International Conference for High Performance Computing, Networking, Storage, and Analysis (SC’19)*, forthcoming.
- Marts, W.P., Dosanjh, M.G.F., **Schonbein, W.**, Grant, R.E., Bridges, P.G. (2019) ‘MPI tag matching performance on ConnectX and ARM’, *Proceedings of the 26th European MPI Users’ Group Meeting*, forthcoming.
- Dosanjh, M.G.F., **Schonbein, W.**, Grant, R.E., Bridges, P.G., Ghazimirsaeed, S.M. (2019) ‘Fuzzy matching: hardware accelerated MPI communication middleware’, In: *2019 19th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing (CCGRID)*, pp. 210–220. doi: 10.1109/CCGRID.2019.00035.
- Levy, S., Ferreira, K.B., **Schonbein, W.**, Grant, R.E., Dosanjh, M.G.F., (2019) ‘Using Simulation to Examine the Effect of MPI Message Matching Costs on Application Performance’, *Parallel Computing*, Volume 84, May 2019, pp. 63-74.
- Dosanjh, M.G.F., Grant, R.E., **Schonbein, W.**, Bridges, P.G., (2018) ‘Tail queues: A multi-threaded matching architecture’, in: *Concurrency and Computation: Practice and Experience*, e5158
- Schonbein, W.**, Dosanjh, M.G.F., Grant, R.E., Bridges, P.G. (2018) ‘Measuring multi-threaded message matching misery’, *Euro-Par 2018: Parallel Processing*, Turin, Italy, pp. 480-491.
- Dosanjh, M.G.F., Ghazimirsaeed, S.M., Grant, R.E., **Schonbein, W.**, Levenhagen, S.M., Bridges, P.G., and Afsafi, A. (2018) ‘The Case for Semi-Permanent Cache Occupancy’ In: *Proceedings of the International Conference on Parallel Processing*, pp. 1–10.
- Schonbein, W.** (2014) ‘Varieties of analog and digital representation’, *Minds & Machines*, DOI 10.1007/s11023-014-9342-x
- Schonbein, W.** (2012) ‘Inspirational anchors: minimal computational models in cognitive science’, *Journal of Experimental & Theoretical Artificial Intelligence*. 24 (3): 385-400.
- Schonbein, W.** (2012) ‘The linguistic subversion of mental representation’, *Minds & Machines*, DOI: 10.1007/s11023-012-9275-1
- Schonbein, W.** (2010) ‘Can computational simulations of language emergence support a ‘use’ theory of meaning?’ *Philosophical Psychology*, 23(1): 59-74.
- Schonbein, W.** (2005) ‘Cognition and the power of continuous dynamical systems’, *Minds & Machines*, 15(1): pp. 57-71.
- Schonbein, W.** (2004), ‘Representation, Mental’, *The New Dictionary of the History of Ideas*, M. Horowitz (ed.), Charles Scribner’s Sons.
- Schonbein, W.** & Bechtel, W. (2003), ‘History of computational modeling and cognitive science’, *Encyclopedia of Cognitive Science*, Nature Publishing Group.
- Schonbein, W.** (1997) ‘Review of Michael Cole’s *Cultural Psychology: A Once and Future Discipline*’, *Philosophical Psychology*, vol. 10, no. 4

PRESENTATIONS

- Schonbein, W. Dosanjh, M. G. F., Grant, R. E., Bridges, P. G., ‘Multithreaded MPI and message matching performance’, EuroMPI, Barcelona, Spain, 25 September 2018, (Poster)
- Schonbein, W. & Arnold, D., ‘Exploring the impact of overlay network topology on tool and application performance’, 4th Workshop on Extreme-Scale Programming Tools, Austin, TX, 16 November 2015
- Schonbein, W. ‘Minimal computational models and cognitive science’, Epistemology of Modeling and Simulation National Conference, Pittsburgh, April 1-3, 2011
- Schonbein, W. ‘How radical is too radical? Chemero’s epistemological arguments against mental representation’, Southern Society for Philosophy and Psychology, New Orleans, March 2011

Schonbein, W. 'Linguistic scaffolding, artificial neural networks, and formal languages', Society for Philosophy and Psychology, Portland, June 2010

Schonbein, W. 'Cognition, computation, and formal symbol individuation', Southern Society for Philosophy and Psychology, Atlanta, April 2010

Schonbein, W. 'Coordinated behavior, emergence and the explanatory salience of collective representations', American Philosophical Association (Pacific Division), Vancouver, April 2009

Schonbein, W. 'Comments on Wayne Wright's 'Opponent processing and the physical basis of color'', Southern Society for Philosophy and Psychology, New Orleans, March 20-22, 2008

Schonbein, W. 'Can computational simulations provide support for theories of meaning?', Mount Holyoke College, May 2007

Schonbein, W. 'Can computational simulations provide support for theories of meaning?', Southern Society for Philosophy and Psychology, April 2007

Schonbein, W. 'Comments on Gualtiero Piccinini's 'The mind as neural software,' Southern Society for Philosophy and Psychology, April 5-7, 2007, Atlanta, GA

Schonbein, W. 'Computing with triangles', Central States Philosophical Association, St. Louis, MO, October, 2001

Schonbein, W. 'Cognition and the Power of Continuous Dynamical Systems', 27th annual meeting of the Society for Philosophy and Psychology, Cincinnati, OH, June 14th, 2001

Schonbein, W. 'Implementation bites back', American Philosophical Association (Central Division), Minneapolis, MN, May 2001

AWARDS

School of Humanities and Social Sciences EXCEL Outstanding Faculty Member of the Year
College of Charleston, 2010-2011

SERVICE

Officer, Computer Science Graduate Student Association, University of New Mexico	<i>2015-2016</i>
Member, School of Humanities and Social Sciences ad-hoc committee on Writing	<i>2010</i>
Member, Faculty R&D Committee, College of Charleston	<i>2009-2011</i>
Member, Budget Committee, College of Charleston	<i>2008-2009</i>
Faculty Advisor, Undergraduate Philosophy Club, College of Charleston	<i>2008-2011</i>
Faculty Representative, Honor Board Committee, College of Charleston	<i>2007-2008</i>
Member, Faculty Educational Technology Committee, College of Charleston	<i>2007</i>

COURSES TAUGHT

Unless otherwise noted, the course was taught in the capacity of a visiting or assistant professor.

Artificial Intelligence (TA, F2013)	Epistemology of Models (F2010)
Discrete Mathematics (TA, S2013)	Philosophy of Mind (S2005, F2005, S2010)
Reasoning & Critical Thinking (F2003, F2004, F2012)	Non-Classical Logic (F2008, S2010)
Honors Western Civilization II (S2010, S2011, S2012)	Introduction to Philosophy (F2001, S2002, F2004, F2005, F2006, S2007, S2008, F2008, S2009, F2009)
Philosophy and the Cognitive Sciences (S2003, S2004, S2007, F2009, F2011)	Philosophy of Language (F2003, S2009)
Propositional and Predicate Logic (S2002, F2002, S2003, S2004, S2006, F2006, F2008, F2010, F2011)	Philosophy and Artificial Intelligence (S2006)
20th Century Analytic Philosophy (S2011)	Critical Thinking (F2004)
	Introduction to Cognitive Science (S2003)

COURSES TAKEN (GRADUATE)

Computer Operating Systems (CS481)
Database Management (CS564)
Artificial Intelligence (CS527)
Advanced Operating Systems (CS587)
Theory of Computation (CS500)
Neural Networks (CS547)
Compiler Construction (CS554)

Mathematical Logic (PHIL511)
Philosophy and Connectionist Theory (PHIL413)
Rationalists (PHIL455)
Situated Cognition (PHIL4171)
Kant (PHIL4581)
Topics in Ethics (PHIL430)
Principles of the Nervous System (BIOL3411)

Complex Adaptive Systems (CS523)
Mobile Application Development (CS591)
Algorithms and Data Structures (CS561)
Cybersecurity (CS544)
Software Foundations (CS558)
Networks (CS585)

Aristotle (PHIL452)
Language, Mind and Action (EDU4483)
Meaning and Normativity (PHIL4061)
Neuroethology (PHIL421)
Human Psychophysiology (PSYCH444)
Theories of Concepts (PHIL426)
Pragmatism (PHIL478)

REFERENCES

On request.