

Rensselaer AI & Reasoning Laboratory
 Department of Computer Science
 Department of Cognitive Science
 Rensselaer Polytechnic Institute
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Education

Ph.D. Program in Computer Science, August 2004-Present
 Rensselaer Polytechnic Institute, Troy NY
 Dissertation: Elisa: A System to Assist Humans in Making Discoveries

B.S., Computer Science and Philosophy of Science, *Summa Cum Laude* (3.9/4.0), May 2004
 Rensselaer Polytechnic Institute, Troy NY

Research Experience

Graduate Research Assistant **Rensselaer Polytechnic Institute Troy, NY**
Department of Computer Science **2004-Present**

Have worked on numerous funded projects requiring expertise in knowledge representation and reasoning, and NLP. Primary developer for Slate, a multifaceted computational assistant for intelligence analysis (Supervised by S. Bringsjord) See <http://www.cogsci.rpi.edu/slate>

Undergraduate Research Assistant **Rensselaer Polytechnic Institute, Troy, NY**
Department of Computer Science **2002-2004**

Initial development of the Slate system. R&D in Existential Graphs, a visual First-Order logical system. Work included proving soundness and completeness results, implementing methods automated theorem proving, and invention of the Pegasus system. (Supervised by B. van Heuveln)

Teaching Experience

**Department of Cognitive Science, Department of Computer Science,
 Rensselaer Polytechnic Institute, Troy, NY**

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|------------------------------|---|--------|-------------|
| Computability and Complexity | <i>Graduate Teaching Assistant</i> | Fall | 2006 |
| Introduction to Logic | <i>Co-lecturer</i> | Fall | 2005 |
| Computability and Logic | <i>Undergraduate Teaching Assistant</i> | Spring | 2004 |
| Introduction to Logic | <i>Undergraduate Teaching Assistant</i> | Fall | 2003 & 2002 |
| Intermediate Logic | <i>Undergraduate Teaching Assistant</i> | Spring | 2003 |
| Computer Science 1 | <i>Undergraduate Teaching Assistant</i> | Spring | 2002 |

Technical Skills

- Programming Languages: Common Lisp, Scheme, Java, C, C++, ML, HTML, DHTML, PHP, ASP, SQL, Lex, Yacc, OpenGL. Operating Systems: MacOS X, Microsoft Windows 95/98/ME/NT/2000/XP, Linux, Solaris, FreeBSD
- Expertise includes knowledge representation and reasoning; natural language processing; foundations of artificial intelligence; and cognitive science. Strong and broad proficiency in key formalisms: probability theory and Bayesian networks, mathematical logic, artificial neural networks.
- Proficiency with ontology languages such as IKL, Common Logic, OWL, KIF
- Excellent technical writing, and presentation skills. Strong proficiency with \LaTeX .

Scientific Software

Bringsjord, Shilliday, Taylor. *Slate*. System for Logic and Theorem Extraction; a logic-based application for assisting reasoners in the fields of Intelligence Analysis, Logic, Math, etc. 2003–present. <http://www.cogsci.rpi.edu/slate>

Bringsjord, Clark, Shilliday, Taylor, Werner. *Solomon*. A Next-Generation QA System. 2006–2007. <http://www.cogsci.rpi.edu/solomon>

Selected Publications

BRINGSJORD, S., SHILLIDAY, A., WERNER, D., CLARK, M., CHARPENTIER, E., AND BRINGSJORD, A. (2008), “Toward logic-based cognitively robust synthetic characters in digital environments.” In *Proceedings of the First AGI Conference*, P. Wang, et al., Eds., vol. 171 of *Frontiers in Artificial Intelligence and Applications*, IOS Press, pp. 87–98.

SHILLIDAY, A., TAYLOR, J., AND BRINGSJORD, S. (2007), “Toward automated provability-based semantic interoperability between ontologies for the intelligence.” In *Proceedings of the Second International Ontology for the Intelligence Community Conference*, K. S. Hornsby, Ed., vol. 299 of *CEUR Workshop Proceedings*, CEUR-WS.org.

TAYLOR, J., SHILLIDAY, A., AND BRINGSJORD, S. (2007), “Provability-based Semantic Interoperability via Translation Graphs.” In *Advances in Conceptual Modeling — Foundations and Applications*, J. L. Hainaut, et al., Eds., vol. 4802 of *LNCIS*, Springer-Verlag, pp. 180–189.

Bringsjord, S., Arkoudas, K., Clark, M., Shilliday, A., Taylor, J., Schimanski, B. & Yang, Y. (2007) “Reporting on Some Logic-Based Machine Reading Research,” in Etzioni, O., ed., *Machine Reading: Papers from the AAAI Spring Symposium Technical Report SS-07-06*, pp. 23–28.

Grants

(all listed here are projects I contributed directly to, and are ones that resulted from proposals I helped prepare)

“Toward Cognitively Robust Synthetic Characters” 7.1.2007–7.1.2008. \$50,000 Seed Grant, Office of Research at Rensselaer.

“AKRRIV” originally in the ARIVA program, now in A-SpaceX. 2005–present. Started 2005. Total award \$, . . . , . . . from DTO (now under IARPA). The funder requests that award amounts be kept nondisclosed.

“Poised-For Learning and the Mechanization Thereof (through MARMML).” 2004–2006. Total award \$600,000 from DARPA IPTO.

“The SAGE Environment in Support of Novel Intelligence from Massive Data (NIMD Program).” 2002–2005. Total award approximately \$, . . . , . . . from ARDA. The NSA requests that award amounts be kept nondisclosed.

Honors, Awards, Appointments

AAAI 2008 Fall Symposium on Automated Scientific Discovery, *Co-Chair*.

Deans List, 2000-2004, Rensselaer Polytechnic Institute.

Upsilon Phi Epsilon, 2003, Rensselaer Polytechnic Institute.