Matthew Peveler

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EDUCATION

Rensselaer Polytechnic Institute — Troy, NY

- *Ph.D. Candidate, Computer Science* — *Expected Summer 2020*
  Teaching Assistant: Fall 2013 - Spring 2015; Research Assistant: Fall 2015 - Ongoing

The College of New Jersey — Ewing, NJ

- *Bachelor of Science, Computer Science* — *May. 2013*
  Member of Upsilon Pi Epsilon, International Honor Society for Computing Sciences

PUBLICATIONS

- Peveler, M., Kephart, J. O., and Su, H. (2019). Reagent: Converting Ordinary Webpages into Interactive Software Agents. In *Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence*, pages 6560–6562, Macao, China. International Joint Conferences on Artificial Intelligence Organization. Winner of Application Impact Award on Demonstration Track

- Peveler, M., Briggs, S., Drozdal, J., Balagyozyan, L., Sun, C., Perrone, M., and Su, H. (2019). Translating the Pen and Paper Brainstorming Process into a Cognitive and Immersive System. In Kurosu, M., editor, *Human-Computer Interaction. Recognition and Interaction Technologies*, volume 11567, pages 366–376. Springer International Publishing, Cham

- Maicus, E., Peveler, M., Patterson, S., and Cutler, B. (2019). Autograding Distributed Algorithms in Networked Containers. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education - SIGCSE '19*, pages 133–138, Minneapolis, MN, USA. ACM Press

- Peveler, M., Maicus, E., and Cutler, B. (2019). Comparing Jailed Sandboxes vs Containers Within an Autograding System. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education - SIGCSE '19*, pages 139–145, Minneapolis, MN, USA. ACM Press

- Briggs, S., Drozdal, J., Peveler, M., Balagyozyan, L., Sun, C., and Su, H. (2019). Enabling Sensemaking for Intelligence Analysis in a Multi-user, Multimodal Cognitive and Immersive Environment. In *Proceedings of the Twelfth International Conference on Advances in Computer-Human Interactions*, pages 07–14, Athens, Greece. IARIA

- Divekar, R. R., Peveler, M., Rouhani, R., Zhao, R., Kephart, J. O., Allen, D., Wang, K., Ji, Q., and Su, H. (2018). CIRA: An architecture for building configurable immersive smart-rooms. In *Advances in Intelligent Systems and Computing*, pages 76–95. Springer International Publishing

- Peveler, M., Srivastava, B., Talamadupula, K., Sundar G., N., Bringsjord, S., and Su, H. (2018). Toward Cognitive-and-Immersive Systems: Experiments in a Cognitive Microworld. In *Proceedings of the Sixth Annual Conference on Advances in Cognitive Systems*, Pal Alto, California, USA

- Peveler, M., Govindarajulu, N. S., and Bringsjord, S. (2018). Towards automating the doctrine of triple effect. In *Proceedings of the International Conference on Robot Ethics and Standards (ICRES 2018)*, Troy, New York, USA

- Bringsjord, S., Govindarajulu, N. S., Sen, A., Peveler, M., Srivastava, B., and Talamadupula, K. (2018). Tentacular Artificial Intelligence, and the Architecture Thereof, Introduced. In *Proceedings of the Architectures and Evaluation for Generality, Autonomy & Progress in AI Workshop (AEGAP 2018)*, Stockholm, Sweden

- Govindarajulu, N. S., Bringsjord, S., Ghosh, R., and Peveler, M. (2017). Beyond the doctrine of double effect: A formal model of true self-sacrifice. In *Proceedings of the International Conference on Robot Ethics and Safety Standards (ICRESS2017)*, Lisbon, Portugal

- Sen, A., Peveler, M., Marton, N., Ghosh, R., Licato, J., Radke, R. J., Woodstock, T.-K. A. E., Dong, B., O'Neil, K., Carter, T., and Bringsjord, S. (2016). Toward the cognitive classroom: Mathematical physics. In *In Proceedings of 6th European Immersive Education Summit*, Padua, Italy

- Arista, D., Bringsjord, S., Peveler, M., Ghosh, R., Bello, P., and Licato, J. (2015). An algorithm for the pragmatic inference of relevance conditionals. Presented at *Model-Based Reasoning in Science and Technology. Models and Inferences: Logical, Epistemological, and Cognitive Issues (MBR15)*

PRESENTATIONS

- Peveler, M., Kephart, J., and Su, H. (2018). Context-aware intention resolution. Talk given at RPI

- Peveler, M., Breese, S., Maicus, E., Aikens, A., Cyrus, T., Dinella, E., Anderson, J., Barthelmess, J., Lee, M., Montealegre, L., Wang, J., Holzbauer, B., Cutler, B., and Milanova, A. (2018). Supporting team submissions and peer grading within submitty. Demo presented at ACM SIGCSE

- Peveler, M., Srivastava, B., Talamadupula, K., Bringsjord, S., and G., N. S. (2017). Solving false beliefs for the cognitive room. Talk/Demo presented at RPI

- Peveler, M., Tyler, J., Breese, S., Cutler, B., and Milanova, A. (2017). Submitty: An open source, highly-configurable platform for grading of programming assignments. Demo presented at ACM SIGCSE 2017

POSTERS

- Peveler, M., Gurjar, T., Maicus, E., Aikens, A., Christoforides, A., and Cutler, B. (2019). Lichen: Customizable, Open Source Plagiarism Detection in Submitty. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education - SIGCSE '19*, pages 1270–1270, Minneapolis, MN, USA. ACM Press

- Aikens, A., Kumar, G., Patel, S., Maicus, E., Peveler, M., and Cutler, B. (2019). Facilitating Discussion-Based Grading and Private Channels via an Integrated Forum. In *Proceedings of the 50th ACM Technical Symposium on Computer Science Education - SIGCSE '19*, pages 1270–1270, Minneapolis, MN, USA. ACM Press

- Peveler, M., Kephart, J., and Su, H. (2018). Reagent: Converting ordinary webpages into interactive software agents. Poster presented at IBM AI Week

- Peveler, M., Maicus, E., Holzbauer, B., and Cutler, B. (2018). Analysis of container based vs. jailed sandbox autograding systems. Poster presented at ACM SIGCSE 2018

- Breese, S., Maicus, E., Peveler, M., and Cutler, B. (2018). Correlation of a flexible late day policy with student stress and programming assignment plagiarism. Poster presented at ACM SIGCSE 2018

- Peveler, M., Srivastava, B., Talamadupula, K., Govindarajulu, N. S., Sen, A., Bringsjord, S., and Su, H. (2017). Towards cognitive-and-immersive systems: Experiments in a shared (or common) blockworld framework. Poster presented at IBM Cognitive Colloquium

- Tyler, J., Peveler, M., and Cutler, B. (2017). A flexible late day policy reduces stress and improves learning. Poster presented at SIGCSE Conference

- Peveler, M., O'Neil, K., Sen, A., Ghosh, R., Dong, B., and Bringsjord, S. (2016). The planning dilemma in cognitive computing for cisl's "cognitive boardroom". Poster presented at IBM Cognitive Colloquium

- Wong, A., Sihsobhon, B., Lindquist, M., Peveler, M., Cutler, B., Breese, S., Tran, E., Jung, J., and Shaw, B. (2016). User experience and feedback on the rpi homework submission server. Poster presented at ACM SIGCSE 2016

- Sen, A., Peveler, M., Marton, N., Ghosh, R., Licato, J., Radke, R. J., Woodstock, T.-K. A. E., and Bringsjord, S. (2015). Towards the cognitive classroom: Mathematical physics. Poster presented for CISL @ EMPAC Launch at RPI

Research Experience

- **Cognitive and Immersive Systems** Cognitive and Immersive Systems Laboratory
  Research Assistant *Fall 2016 - Ongoing*
    - Explore resolution of intents and entities from multi-modal contexts.
    - Integrate spatial context system into use by Cognitive Immersive Room to allow alternative control schemes instead of traditional mouse/keyboard.
    - Act as technology liaison between RPI and IBM labs.
    - Develop modules written in NodeJS and Python utilizing MongoDB, PostgreSQL, RabbitMQ, and Redis.
    - Develop module to handle creation and usage of domain trees across various scenarios.
    - Develop service and sensor discovery using combination of UDP and RabbitMQ.
    - Implementation of formal logic, Cognitive Event Calculus, to model theory of mind of agents within system and use theorem prover and planner to handle reasoning over these mental states.
    - Creation of Cognitive Polygon Framework for definition of tasks and cognitive agents for tasks in Blockworld, Hyperproof, CLEVR, etc.
- **IBM - Brasil** Rio de Janeiro, Brasil
  Pesquisador / Cientista - Junior (Junior Researcher) *September 2019 – Current*
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Work Experience

- **Rensselaer Polytechnic Institute** Troy, NY
  Teaching Assistant *Fall 2013 – Spring 2015*
    - Ran labs and held office hours for Computer Science I
    - Acted as head TA for professor from Fall 2014 to Spring 2015
    - As head TA, helped professor manage other TAs, setup submission and grading for HWs, labs, and tests, dealt with cheaters, and other miscellaneous tasks.
- **Pitney Bowes** Troy, NY
  Software Development Intern *June 2014 – Dec 2015*
    - Primarily worked on fixing bugs and improving testing efforts of the Location Intelligence module of Spectrum Spatial
    - Researched porting XML based test suites to native JUnit test suites
    - Created JUnit extensions for parametrized testing to simplify adding new data providers for testing
    - Implemented 9 functions to Spectrum Spatial's SQL dialect.
- **Media Technology Support Service at TCNJ** Ewing, NJ
  User Support *May 2011 - Jul 2013*
    - Assist teachers with any issues they have with media technology.
    - Diagnose and troubleshoot problems in media equipped classrooms.
    - Deliver and set up media technology for professors.

Projects

- **Submitty** (https://submitty.org)
    - Written using PHP, Python, and C++ backed by PostgreSQL.
    - Open source programming assignment submission system developed at RPI.
    - Developed core technologies (DB, MVC pattern) using PHP for submission website.
    - Created installation and vagrant scripts making it easier for new developers to join project.
    - Develop and maintain Travis-CI automation tasks for testing and building project.
    - Help manage tasks and review work from undergraduates working on the project.
    - Mentor student as part of the Google Summer of Code 2018 on plagiarism detection module.
    - Integrate Docker into the autograding process next to existing jailed sandbox.

- **Forseti**: Open source automated theorem prover written in Python.