Richard Rast

Contact Information

`richard.rast@gmail.com`
(850) 830-0284

Website

`http://rodya-mirov.github.io`

Education

University of Maryland
Ph.D., Mathematics, May 2016 (expected)

Thesis: The Complexity of Isomorphism for Some First-Order Theories
Advisor: Michael C. Laskowski

M.A., Mathematics, May 2012

Dickinson College
B.S., Computer Science, May 2009
B.S., Mathematics, May 2009

Industry Experience

Bluefin, LLC (previously Roof Express)

- *Data Scientist*, March 2016 - current
  - Built data-driven prediction systems to determine when a roof would fail.
  - Mathematically determined what types of data are worth collecting.
- *Developer*, Summer 2010 and Summer 2012
  - 2010: Built the RoofBOSS system, which rearranges capital expenses to smooth out spending between years for large groups of structures.
  - 2012: Made improvements for RoofBOSS, to minimize capital spending increase while smoothing.

Programming Languages

C# – significant professional and hobbyist experience
Python – significant hobbyist experience
Java – significant academic and hobbyist experience
Matlab / Octave – moderate academic experience
R – some hobbyist experience
HTML, CSS, JavaScript – some hobbyist experience
LaTeX – significant professional experience

Open Source Projects

Selected Projects from GitHub – see `https://github.com/rodya-mirov`

- *Voxelist* – A basic engine for an infinite 3D procedurally generated world, which can be explored in first person. Written in C# with XNA.
- *Infinite Tile Engine 2D* – Similar to Voxelist, but in 2D and with support for NPCs. Written in C# with XNA.
- *Frog Defense* – A tower defense game with a twist. Made for a seven-day challenge. Written in C# with XNA.
- *rodya-mirov.github.io* – My personal website. Written in HTML, CSS, and JavaScript, with Bootstrap. Also contains an extremely minimalist CMS written in Python.

Academic Experience

University of Maryland

- *Lecturer*, August 2009 through May 2016
  - Designed and administered completed courses, including writing lectures, assignments, and tests.
  - Assisted individual students through tutoring and office hours.
  - Wrote a supplemental textbook for "Introduction to Proof," to fill gaps in the existing text.
- *Teaching Assistant*, August 2009 through May 2016
  - Reinforced the lecture through group "discussion" meetings.
  - Assisted individual students through tutoring and office hours.
- *Graduate Student*, August 2009 through May 2016
  - Learned advanced mathematics through courses and independent research.
  - Produced original research, independently and with collaborators, including three peer reviewed papers and a dissertation.
  - Gave talks on my research at conferences and seminars throughout the country.
- *Seminar Organizer*
  - Student Logic Seminar, Fall 2012 through Spring 2016
  - RIT on Logic and Number Theory, Fall 2013

Recent Honors and Awards

2015 – Spotlight on Graduate Research (winning talk)
2015 – Aziz/Osborn Gold Medal in Teaching Excellence
2014 – Mark E. Lachtman Fellowship (dissertation award)
2010 – Aziz/Osborn Gold Medal in Teaching Excellence

Published Research

Peer-Reviewed Publications – see my website or `arXiv.org` for preprints.

- R. Rast, *The Borel Complexity of Isomorphism for Theories of Linear Orders* (submitted).
- D. Ulrich, C. Laskowski, R. Rast, *A New Notion of Cardinality for Countable First-Order Theories* (submitted).
- R. Rast, D. Sahota, *The Borel Complexity of Isomorphism for O-Minimal Theories,* Journal of Symbolic Logic (to appear).

Research Talks

Invited Talks on my Research – see my website for titles and slides.

- Model Theory Seminar, Rutgers University (April 2016).
- AMS Western Sectional Meeting, University of Utah (April 2016).
- Logic Seminar, Pennsylvania State University (March 2016).
- Model Theory Seminar, City University of New York (March 2016).
- Notre Dame Logic Seminar (December 2015).
- The Second Vaught's Conjecture Conference, University of California at Berkeley (June 2015).
- Model Theory Seminar, City University of New York (November 2014).