

## Richard Rast

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CONTACT INFORMATION      **richard.rast@gmail.com**  
(850) 830-0284

WEBSITE      <http://rody-mirov.github.io>

EDUCATION      **University of Maryland**  
Ph.D., Mathematics, May 2016  
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.
- Designed products and services to support and be supported by the data analysis.

☐ *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 professional and academic experience  
**HTML, CSS, JavaScript** – some hobbyist experience  
**LaTeX** – significant professional experience

OPEN SOURCE PROJECTS      **Selected Projects from GitHub** – see <https://github.com/rody-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 more game-related features. 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.  
☐ *rody-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

- 2016** – James C. Alexander Prize for Graduate Research
- 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](http://arxiv.org) for preprints.
- D. Ulrich, C. Laskowski, R. Rast, *A New Notion of Cardinality for Countable First-Order Theories* (submitted).
  - R. Rast, *The Borel Complexity of Isomorphism for Theories of Linear Orders*, Archive of Mathematical Logic (to appear).
  - 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).
  - Logic Seminar, University of Notre Dame (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).