

T. Ryan Hoens

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Education

- 2008–Present **Ph.D. Candidate in Computer Science and Engineering**, *University of Notre Dame*, USA.
- GPA: 3.9/4.0.
- Expected: May 2012.
- Advisor: Nitesh V. Chawla
- Topic: Data Mining/Machine Learning.
- 2003–2008 **M.S. in Computer Science**, *Rochester Institute of Technology*, Rochester, NY.
- GPA 4.0/4.0
- Advisor: Ivona Bezáková
— MASTERS THESIS
Title *Counting and Sampling Paths in Graphs*
- 2003–2008 **B.S. in Computer Science**, *Rochester Institute of Technology*, Rochester, NY.
- GPA 3.7/4.0
- Minor: Mathematics and German

Research Interests

- Machine learning
- Data Mining
- Learning from highly imbalanced datasets
- Learning in non-stationary data streams
- Privacy preserving data mining
- Cryptography/Security
- Secure multi-party computation

Publications

Peer-Reviewed Journal Articles

David Cieslak, T. Ryan Hoens, Nitesh V. Chawla, and W. Philip Kegelmeyer. Hellinger distance decision trees are robust and skew-insensitive. *Data Mining and Knowledge Discovery*, pages 1–23, 2011.

Peer-Reviewed Conference Papers and Extended Abstracts

T. Ryan Hoens, Qi Qian, Nitesh V. Chawla, and Zhi-Hua Zhou. Building decision trees for the multi-class imbalance problem. In *Pacific-Asia Conference on Knowledge Discovery and Data Mining*. IEEE, Under Review.

T. Ryan Hoens, Robi Polikar, and Nitesh V. Chawla. Heuristic updatable weighted random subspaces for nonstationary environments. In *2011 IEEE International Conference on Data Mining*. IEEE, 2011.

Troy Raeder, T. Ryan Hoens, and Nitesh V. Chawla. Consequences of variability in classifier performance estimates. In *2010 IEEE International Conference on Data Mining*, pages 421–430. IEEE, 2010.

T. Ryan Hoens, Marina Blanton, and Nitesh V. Chawla. Reliable medical recommendation systems with patient privacy. In *Proceedings of the 1st ACM International Health Informatics Symposium*, pages 173–182. ACM, 2010.

T. Ryan Hoens, Marina Blanton, and Nitesh V. Chawla. A private and reliable recommendation system for social networks. In *IEEE International Conference on Social Computing/IEEE International Conference on Privacy, Security, Risk and Trust*, pages 816–825. IEEE, 2010.

T. Ryan Hoens and Nitesh V. Chawla. Generating diverse ensembles to counter the problem of class imbalance. In *Pacific-Asia Conference on Knowledge Discovery and Data Mining*, pages 488–499. Springer, 2010.

Experience

Research

2008–Present **Research Assistant**, *University of Notre Dame*, Faculty: Prof. Nitesh V. Chawla, and Prof. Marina Blanton.

- Developed an algorithm to learn from imbalanced data, with an emphasis on the two class problem.
- Developed an algorithm to learn from data streams which exhibit concept drift and class imbalance.
- Developed an algorithm to compute secure and private functions over social networks.

Work

2006 – 2007 **Computer Science Coop**, *National Security Agency*, Fort Meade, MD.

Research Roles - Devised an algorithm to increase network throughput in asynchronous network communications and presented the results of the research at a talk and in a white paper.
- Researched an algorithm for determining user identity based on typing characteristics.

Leadership Roles - Led project team of four from inception to development through deployment of a QRC (Quick Reaction Capability) system.
- Coordinated system deployment, and trained others on its use.

Teaching

2010-2011 **Teaching Assistant**, *University of Notre Dame*.

- Tutored graduate and undergraduate students in Data Mining and Linear Programming.

2005-2008 **Teaching Assistant**, *Rochester Institute of Technology*, Teaching Assistant.

- Taught first and second year introductory labs in Computer Science
- Tutored graduate and undergraduate students in Computer Science Theory.
- Evaluated homework and projects of both graduate and undergraduate students.

Professional Service

Reviewer

- Pattern Recognition Letters
- IEEE International Conference on Data Mining
- Statistical Analysis and Data Mining
- IEEE Transactions on Knowledge and Data Engineering
- IEEE Transactions on Systems, Man, and Cybernetics Part B
- ACM SIGHT International Health Informatics Symposium

Honors and Awards

- Notebaert Fellowship recipient from the University of Notre Dame Graduate School.
- Maintained a Top Secret (TS)//Sensitive Compartmented Information (SCI) clearance with full polygraph.
- Awarded a cash grant from NSA for development and deployment of the QRC system (2006).
- Awarded RIT full graduate scholarship from the Department of Computer Science at Rochester Institute of Technology (2007-2008).
- Awarded RIT Presidential Scholarship (2003-2008).
- RIT Dean's List Student every quarter attended (2003-2008).

Languages

English **Native**
German **Intermediate**

Skills

OS:	Linux/Unix, Windows	Programming:	C/C++, Java, Ruby
Job-related:	WEKA, Matlab	Typography:	L ^A T _E X