

Christian Skalka

Assistant Professor of Computer Science



Education

BA, Philosophy and Mathematics, St. John's College, 1991
MS, Logic and Computation, Carnegie Mellon University, 1997
PhD, Computer Science, The Johns Hopkins University, 2002

Research Areas

Programming Languages, Computer Security, Wireless Sensor Networks

Courses

Programming Languages
Discrete Mathematics

Christian Skalka joined the UVM Department of Computer Science in the fall of 2002. Dr. Skalka earned his PhD in Computer Science at the Johns Hopkins University, where his doctoral research focused on the enforcement of security in programming languages via static (compile-time) analyses, and via type systems in particular.

Prior to his doctoral research, Dr. Skalka received a BA in classical philosophy and mathematics at St. Johns College. He then worked at the Los Alamos National Laboratories and the National Institutes of Health on GenBank, a database serving the Human Genome Project. Returning to academia, he received an MS degree in Logic, Computation and Methodology at Carnegie Mellon University. This progression of professional experience led him to a career in Computer Science research and teaching.

As an assistant professor at UVM, Dr. Skalka has continued his research in programming language-based computer security, establishing fundamental results that have appeared in prestigious journals such as ACM Transactions on Programming Languages and Systems and the Journal of Functional Programming. In recent years Dr. Skalka's work on security mechanisms in programming languages has been supported by a grant from the DoD Air Force Office of Scientific Research.

Dr. Skalka's interest in computer security is one instance of his more general interest in distributed computing systems. He is also involved Wireless

Sensor Networks (WSNs). In particular, his research into snowpack monitoring using WSNs, a collaborative effort with investigators in Engineering and Geography at UVM, is supported by a NASA DEPSCoR exploratory grant.

When Dr. Skalka is not working, he is outdoors enjoying the mountains of New England with his wife Susan.

Selected Publications

- Peter Chapin, Christian Skalka, and X. Sean Wang. *Authorization in Trust Management: Features and Foundations*. To appear in ACM Computing Surveys.
- Christian Skalka, X. Sean Wang, and Peter Chapin. *Risk Management for Distributed Authorization*. Journal of Computer Security 15(4): 447-489, 2007.
- Francois Pottier, Christian Skalka, and Scott Smith. *A Systematic Approach to Static Access Control*. ACM Transactions on Programming Languages and Systems 27(2): 344-382, 2005.

Funded Research

- PI for *Trace Effect Analysis for Software Security*. Funded by USAF, AFRL, Air Force Office of Scientific Research, \$358,185, 06/01/06-05/31/09
- Co-PI for An Exploratory Project to Develop an In Situ Water Equivalent Monitoring System with Improved Spatial Resolution. Funded by NASA DEPSCoR, \$25,000, 07/01/08-6/30/08. Co-PIs: B. Wemple, J. Frolik, T. Neumann.