

Tudor S. Marian

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EDUCATION *PhD* Student in Computer Science, Cornell University **2004 – present**
Advisors: Hakim Weatherspoon and Ken Birman.

Diplomă (Combined B.S. and M.Eng.), Computer Science **1999 – 2004**
Technical University of Cluj-Napoca (UTCN), Romania.
• GPA: 10.00 out of 10.00

RESEARCH INTERESTS Operating systems, distributed systems and networking.

RESEARCH EXPERIENCE *FWP: Featherweight User-Mode Processes With Fast Reflexes* Graduate RA, Cornell
with Hakim Weatherspoon, Mahesh Balakrishnan and Ken Birman **2008**
Conceived and built new process and IPC abstractions for the commodity operating systems that enables general purpose network packet processing at multi-gigabit line speed in user-space.

Maelstrom Graduate RA, Cornell
with Mahesh Balakrishnan, Ken Birman and Hakim Weatherspoon **2007 – 2008**
Collaborated in designing and building Maelstrom, a transparent network gateway that uses Forward Error Correction to recover loss in high latency/high bandwidth links. Kernel version project lead.

Smoke and Mirrors File System (SMFS) Graduate RA, Cornell
with Hakim Weatherspoon **2007 – 2008**
Designed and built abstractions enabling the SMFS mirroring file system to provide disaster fault tolerance with semi-synchronous performance and near-synchronous guarantees.

Diaspora Graduate RA, Cornell
with Robbert van Renesse **2007**
Conceived and built Diaspora, a system that makes information available across federated domains. It also provides seamless site fail-over backup.

Tempest Graduate RA, Cornell
with Ken Birman and Robbert van Renesse **2006 – 2007**
Designed, built, and evaluated a runtime for storage and replication of service-level soft state. Data stored in *TempestCollections* is transparently replicated for availability and fault tolerance with zero effort from the developer.

Scalable Services Architecture (SSA) Graduate RA, Cornell
with Ken Birman and Robbert van Renesse **2005 – 2006**
Designed, built, and evaluated a framework for porting non-transactional high performance applications onto clusters. We show that two simple yet powerful primitives (chain replication and epidemic protocols) can uniformly support a significant class of scalable, fault-tolerant services.

Mobile Agent Behavior Design Patterns Undergraduate RA, UTCN
with Ioan Salomie and Mihaela Dînsoreanu **2003 – 2004**
Designed, built, and evaluated a framework for building mobile agents based on behavioral patterns tailored for virtual learning environments.

CONED: Virtual University

with Ioan Salomie and Mihaela Dinsoreanu

Participated in the design and development of a web-based virtual university for UTCN.

Undergraduate RA, UTCN

2002 – 2003

PUBLICATIONS

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- [1] Hakim Weatherspoon, Lakshmi Ganesh, **Tudor Marian**, Mahesh Balakrishnan, and Ken Birman. Smoke and Mirrors: Reflecting Files at a Geographically Remote Location Without Loss of Performance. In *Proceedings of the 7th USENIX Conference on File and Storage Technologies (FAST '09)*, February 2009.
- [2] **Tudor Marian**, Mahesh Balakrishnan, Ken Birman, and Robbert van Renesse. Tempest: Soft State Replication in the Service Tier. In *Proceedings of the 38th Annual IEEE/IFIP International Conference on Dependable Systems and Networks (DSN-DCCS '08)*, June 2008.
- [3] Mahesh Balakrishnan, **Tudor Marian**, Ken Birman, Hakim Weatherspoon, and Einar Wollset. Maelstrom: Transparent Error Correction for Lambda Networks. In *Proceedings of the 5th USENIX Symposium on Networked Systems Design and Implementation (NSDI '08)*, April 2008.
- [4] **Tudor Marian**, Robbert van Renesse, and Ken Birman. Diaspora: Join and Strengthen Information Across Administrative Domains. In *Proceedings of the 21st ACM Symposium on Operating Systems Principles (SOSP '07)*, October 2007. Poster session.
- [5] Ken Birman, Mahesh Balakrishnan, Danny Dolev, **Tudor Marian**, Krzysztof Ostrowski, and Amar Phanishayee. Scalable Multicast Platforms for a New Generation of Robust Distributed Applications. In *Second International Conference on Communication System Software and Middleware (COMSWARE '07)*. IEEE Computer Society, January 2007.
- [6] **Tudor Marian**, Ken Birman, and Robbert van Renesse. A Scalable Services Architecture. In *Proceedings of the 25th IEEE Symposium on Reliable Distributed Systems (SRDS '06)*. IEEE Computer Society, October 2006.
- [7] **Tudor Marian**, Bogdan Dumitriu, Mihaela Dinsoreanu, and Ioan Salomie. A framework of reusable structures for mobile agent development. In *Proceedings of the 8th IEEE International Conference on Intelligent Engineering Systems*, September 2004.
- [8] **Tudor Marian** and Bogdan Dumitriu. Coned: A web based virtual university. Technical report, Technical University of Cluj-Napoca, Cluj-Napoca, 2003.

PROFESSIONAL ACTIVITIES External Reviewer for NSDI 2008. Member of IEEE and ACM.

SELECTED PRESENTATIONS *DSN 2008*: Tempest: Soft State Replication in the Service Tier.
NSDI 2008: FWP: Featherweight User-Mode Process with Fast Reflexes – poster session.
SOSP 2007: Diaspora – poster session.
SRDS 2006: A Scalable Services Architecture.
Cornell Systems Seminar: Presented selected papers on three occasions.

TEACHING EXPERIENCE *CS514 Intermediate Computer Systems* *Teaching Assistant*
Instructor: Ken Birman **Spring 2007**
Held office hours, guided students in completing class projects.

CS211 Computers and Programming *Teaching Assistant*
Instructors: Keshav Pingali, Jai Shanmugasundaram, David I. Schwartz **Fall 2004**
Taught weekly sections, held office hours and wrote homework assignments and exams.

**COURSE
WORK*****Cornell University***

CS681 Analysis of Algorithms, *CS411* Programming Languages, *CS614* Advanced Systems, *CS612* Compiler Design for High-Performance Architectures, *CS481* Automata Theory, *CS421* Numerical Analysis and Differential Equations, *CS615* Peer-to-Peer Systems, *CS616* Self Stabilization Systems, *CS687* Cryptography, *CS678* Advanced Topics in Machine Learning, *CS787* Cryptography Seminar, *CS685* The Structure of Information Networks, *NBA507* Entrepreneurship for Scientists and Engineers.

HONORS

Travel grant award for DSN-DCCS 2008
Performance state distinction fellowship
Merit state distinction fellowship

2008
2001-2004
1999-2001

LANGUAGES

- **Romanian:** native
- **English, French, Italian:** fluent
- **Spanish:** average

REFERENCES

Available upon request.