

# James W. Anderson

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## Education:

- UNIVERSITY OF CALIFORNIA, SAN DIEGO** La Jolla, CA  
Candidate for Doctor of Philosophy in Computer Science, June 2004-present. Adviser: Amin Vahdat
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY** Cambridge, MA  
Master of Engineering degree in Electrical Engineering and Computer Science, June 2004. **Graduate GPA: 5.0/5.0**
- MASSACHUSETTS INSTITUTE OF TECHNOLOGY** Cambridge, MA  
Bachelor of Science degrees in Computer Science and Literature, June 2003. **Undergraduate GPA: 4.8/5.0**

## Research Interests:

Distributed systems, operating systems, cloud computing, fault tolerance, network storage

## Technical Expertise:

C++, Perl, Java, Scheme, Linux, asynchronous/concurrent systems, RPC/messaging, consistency protocols, compilers

## Experience:

- U.C. San Diego CSE Systems and Networking Group** La Jolla, CA  
Graduate Research (June 2004 to present)
- xOMB: Scalable, programmable, high performance *eXtensible Open MiddleBoxes* with commodity servers.
  - MapStore: Strongly consistent cross data-center replication for reliable and scalable cloud computing storage.
  - Corfu: High availability for strongly consistent wide-area replicated systems using *local recovery*.
  - Mace: Language and toolkit for building high performance, fault-tolerant, event-driven distributed systems in C++.
  - MaceMC: Software model checker and debugger for liveness/safety properties in distributed systems implementations.
  - Tsync: *Transparent* synchronization between distributed peers for high availability. Google Summer of Code grant.
- Google** Mountain View, CA  
Research Intern (June 2007 to September 2007)
- Designed and implemented replica set migration protocols for wide-area replication layer.
- HP Labs Storage Group** Palo Alto, CA  
Research Intern (June 2006 to September 2006)
- Developed a distributed self-rate-limiting auditing tool to be deployed on the Internet Archive to find latent storage faults.
- MIT CSAIL Computer Architecture Group** Cambridge, MA  
Graduate Research (May 2003 to May 2004)
- Researched and implemented a high-performance software router using parallel architectures for the forwarding path.
- MIT LCS Programming Methodology Group** Cambridge, MA  
Undergraduate Research (December 2002 to May 2003)
- Researched archival peer-to-peer file system without storage overhead based on log-structured DHT store.
- Machinatio, Inc.** Cambridge, MA  
Founder and Chief Technology Officer (January 2000 to January 2003)
- Co-founded a consulting company that developed custom web and network projects for many clients.
- IBM Extreme Blue** Research Triangle Park, NC  
Software Engineer (May 2002 to August 2002)
- Designed and implemented databases and autonomic algorithms to automatically deploy configuration and OS profiles.

## Teaching:

- U.C. San Diego** La Jolla, CA
- Instructor - *Principles of Computer Operating Systems* (CSE 120), Summer 2010.
  - Teaching Assistant - *Networked Services* (CSE 124), Fall 2008.

## **Publications:**

Charles Killian, James W. Anderson, Ryan Braud, Ranjit Jhala, and Amin Vahdat, "**Mace: Language Support for Building Distributed Systems.**" *2007 Programming Languages Design and Implementation*, June 2007.

Charles Killian, James W. Anderson, Ranjit Jhala, and Amin Vahdat, "**Life, Death, and the Critical Transition: Finding Liveness Violations in Systems Code.**" *2007 Networked Systems Design and Implementation - Award Paper*, April 2007.

Umar Saif, James W. Anderson, Anthony Degangi, and Anant Agarwal, "**Gigabit Routing on a Software-exposed Tiled-microprocessor.**" *2005 Symposium on Architecture for Networking and Communications Systems*, October 2005.

Dejan Kostić, Ryan Braud, Charles Killian, Erik Vandekieft, James W. Anderson, Alex C. Snoeren, and Amin Vahdat, "**Maintaining High-bandwidth under Dynamic Network Conditions.**" *2005 USENIX Annual Technical Conference*, April 2005.

James W. Anderson, "**The Raw Router: Gigabit Routing on a General-purpose Microprocessor.**" *Thesis (M.Eng.) - MIT*, May 2004.