Tony Mason

Curriculum Vitae

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DOCTORAL RESEARCH

"Percipience: Enabling Associative File Systems for Unstructured Data Relationships"

My research examines mechanisms for extending traditional file systems functionality to enable the capture, storage, retrieval, and search of the relationships between data elements. Because of the vast body of existing applications, my work explores how to support existing applications at the same time enabling incremental evolution of applications to exploit this functionality to provide a richer set of tools to find data relationships amongst the user's personal data.

WORK EXPERIENCE

CURRENT, FROM JULY 2017 (PT)

wamason.com
Expert

Litigation support for clients requiring expert services. This work primarily focuses on assisting in the preparation of materials necessary for patent litigation. I provide research, prepare reports, explain technical terms clearly and lucidly, engage in depositions, etc. The focus is on clearly explaining potentially complex technical concept and terms to non-technical people.

CURRENT, FROM AUGUST 2015 (PT)

Georgia Institute of Technology
Instructional Assistant

Provide support for the Online Master's in Computer Science programs course. Responsibilities included providing formative and summative analysis to students, develop automatic grading tools, explain concepts to students, provide direction to other team members, work with instructors regarding course execution and improvements. Responsible for detecting and reporting student plagiarism.

CURRENT, FROM 2011 (PT)

BitRaider
Technical Adviser

Provide technical advice to BitRaider, a company specializing in streaming game delivery.

NOVEMBER 1994 – NOVEMBER 2016 (FT)

OSR Open Systems Resources, Inc.
Consulting Partner

In this role I was responsible for providing services to commercial customers, by designing and implementing key file systems technologies for file systems and file system filter drivers. I was involved in critical aspects of our educational offerings, teaching classes in Driver Development, File Systems Development, File System mini-filter development and Kernel Debugging. Focus was on the Windows OS platform. Recent projects

EDUCATION

2017 – PRESENT **Doctor of Philosophy**
IN PROGRESS
Computer Science
University of British Columbia

2015 – 2017 **Master of Science**
Computer Science
Georgia Institute of Technology

1983 – 1987 **Bachelor of Science**
Department of Mathematics
University of Chicago

COMPUTER SKILLS

LANGUAGES C, C++, Python, LaTeX, etc.
OPERATING SYSTEMS Windows, Linux, UNIX, etc.

COMMUNICATION SKILLS

CONFERENCES
Invited Speaker at WDC
Invited Speaker at IDC
Invited Speaker at AFSUG Retrospective

POSTERS
Percipience - UBC CS-50 – 2018

COURSES
Developing Windows File Systems
Developing Windows FS Mini-Filters
Advanced Windows Driver Development
Windows Internals (Source Code)
Porting Windows Drivers to 64-bit
Windows Kernel Debugging

SKILLS

Goal Oriented

I believe in action over long-winded discussions. I listen to everyone's viewpoints and use my judgement to act based on consensus to achieve goals quickly and efficiently.

Fail Fast

When working on projects it is important to work towards success. One way I use to achieve this is to establish mechanisms to tell *when* something is not going to work — to *fail fast* in order to maximize the useful work and minimize the cost of investigating paths that will not lead to success.

Education

One of the most rewarding aspects of my work is in helping other people learn and grow. It is deeply rewarding when former students, employees, and colleagues tell me how I helped

include: Isolation Filter Kit that provides multiple simultaneous views of a single file on either local or network storage without modifying the underlying file system. This abstraction was useful for transparent per-file encryption in that different applications could be given different views (raw or encrypted) of the file, with coherency, specialized file system mini-filter for transparently backing up SQL databases to Azure, another for doing block level change tracking for SQL databases.

SEPTEMBER 1993 TO NOVEMBER 1994 (FT)

FORE Systems
Technical Manager

In this role I was responsible for commercial ATM adapter device driver development for PC platforms (Windows, Novell, and OS/2). Actively participated in the ATM Forum (SA&A and LAN Emulation SWG). Worked with both Microsoft and Novell to define and establish architectural support for ATM.

JULY 1989 TO SEPTEMBER 1993 (FT)

Transarc Corporation
Area Manager (previously Member of Technical Staff)

Technical management for DCE LFS physical media file systems work: coordinate activities of team members, managed DCE/DFS integration including working with key external partners: OSF, HP, IBM and Digital Equipment Corporation. Transarc AFS development on various UNIX platforms, DCE/DFS development. As a member of the Episode team I was responsible for designing and implementing the transactional system, still novel for its use of undo/redo model journaling. Part of the DCE/DFS development team, participated in architecture and design.

JUNE 1987 TO JUNE 1989 (FT)

Leland Stanford Jr. University
Research Staff

Working in Professor David Cheriton's Distributed Systems Group. Responsible for systems administration for the group. Implemented the UNIX version of VMTP (Versatile Message Transport Protocol), a reliable transport protocol for use over IP, including IP multicast. Wrote kernel mode device drivers for Ethernet NICs for the V Operating System, as well as a primitive kernel debugger.

them in improving their own work. To achieve this, I strive to break things down and make them understandable based upon the listener's current level of understanding.

Passionate

I have been involved in computer systems from an early age. My education, work, and research have fueled my passion for these topics. I enjoy learning new technologies and finding ways to re-examine old technologies in light of greater understanding. I greatly enjoy finding new ways to make systems better, not only in terms of performance but also as tools for creativity and productivity for *all* users.

PATENTS

US/9830329 METHODS AND SYSTEMS FOR DATA STORAGE
US/9600486 FILE SYSTEM DIRECTORY ATTRIBUTE CORRECTION
US/9535759 WORK QUEUE THREAD BALANCING
US/8990228 ARBITRARY DATA TRANSFORMATION
US/8903874 FILE SYSTEM DIRECTORY ATTRIBUTE CORRECTION
US/8539228 MANAGING ACCESS TO A RESOURCE
US/8521752 ARBITRARY DATA TRANSFORMATIONS
US/8024433 MANAGING APPLICATION RESOURCES
US/7809897 MANAGING LOCK RANKINGS
US/7512748 MANAGING LOCK RANKINGS
US/7949693 LOG-STRUCTURED HOST DATA STORAGE
US 15/791,486 METHODS AND SYSTEMS FOR DATA STORAGE

BOOKS

Windows NT Device Driver Development (with Peter Viscarola), New Riders, 1998

lex & yacc, O'Reilly & Associates, June 1990 (1st Edition), November 1992 (2nd Edition)

PEER REVIEWED PAPERS

Collaboration versus Cheating: Reducing Code Plagiarism in an Online MS Computer Science Program, SIGCSE February 27-March 2, 2019 (Primary author)

DEcorum File Systems Architecture, USENIX Technical Conference Summer 1990.(Co-author)

The Episode File System, USENIX Technical Conference Winter 1992. (Co-author)

ARTICLES

CHANGES IN WINDOWS 10 REDSTONE, THE NT INSIDER, JANUARY/FEBRUARY 2017

LOGICAL AND PHYSICAL FILE SIZES IN WINDOWS, THE NT INSIDER, MARCH/APRIL 2015

MINIFILTER LOAD AND UNLOAD ORDERING, THE NT INSIDER, MAY/JUNE 2014

ALTERNATIVES TO DRIVE LETTERS, THE NT INSIDER, MAY/JUNE 2014

WINDOWS POOL MANAGER, THE NT INSIDER, JAN/FEB 2014

THE ISOLATION DRIVER (PART II), THE NT INSIDER, VOL. 18, ISS. 1, JANUARY 2011

THE ISOLATION DRIVER (PART I), THE NT INSIDER, VOL. 17, ISS. 2, JULY 2010

UNDOCUMENTED DFS & RDR INTERACTIONS, THE NT INSIDER, VOL. 17, ISS. 2, JULY 2010

FILE SYSTEMS, FILE SYSTEM FILTER DRIVERS AND REMOVABLE STORAGE DEVICES, THE NT INSIDER, VOL. 16, ISS. 2, MAY 2009

FILTERING FILE SYSTEMS – TEN THINGS YOU SHOULD KNOW, THE NT INSIDER, VOL. 16, ISS. 1, JANUARY 2009

DEBUGGING 103: WHERE TO GO WITH A SYSTEM CRASH, THE NT INSIDER, VOL. 15, ISS. 2, JULY 2008

WINDOWS VISTA AND FILE SYSTEMS, THE NT INSIDER, VOL. 14, ISS. 4, NOVEMBER 2007

AN INTRODUCTION TO TRANSACTIONS, THE NT INSIDER, VOL. 14, ISS. 1, JANUARY 2007

MUP CHANGES IN WINDOWS VISTA, THE NT INSIDER, VOL. 14, ISS. 1, JANUARY 2007

OBTAINING A USEFUL NAME FOR THE EXECUTABLE IMAGE IN A PROCESS, THE NT INSIDER, VOL. 13, ISS. 4

AN INTRODUCTION TO FILE SYSTEM STREAMS, THE NT INSIDER, VOL. 13, ISS. 2, MARCH 2006

HASHING TECHNIQUES, THE NT INSIDER, VOL. 13, ISS. 1, JANUARY 2006

THE TRANSACTIONAL FILE SYSTEM (TXFS) IN WINDOWS, THE NT INSIDER, VOL. 12, ISS. 3 MAY 2005

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TESTING FILE SYSTEMS, THE NT INSIDER, VOL. 11, ISS.3, MAY 2004

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CLEVER WAYS TO SAVE STACK SPACE, THE NT INSIDER, VOL. 11, ISS. 2, MARCH 2004

FINDING FILE CONTENTS IN MEMORY, THE NT INSIDER, VOL. 11, ISS. 1, JANUARY 2004

DEBUGGING A SOUND DRIVER, THE NT INSIDER, VOL. 11, ISS. 1, JANUARY 2004

CACHING IN THE PENTIUM 4 PROCESSOR, THE NT INSIDER, VOL. 11, ISS. 1, JANUARY 2004

FINDING YOUR WAY THROUGH THE STACK, THE NT INSIDER, VOL. 9, ISS. 6, NOVEMBER 2003

EMERGING ISSUES IN IOCANCELFILEOPEN, THE NT INSIDER, VOL. 10, ISS. 4, SEPTEMBER 2003

DEBUGGING ANOTHER CRASH DUMP, THE NT INSIDER, VOL. 10, ISS. 2, MARCH 2003

CALLING CONVENTIONS FOR THE X86, THE NT INSIDER, VOL. 10, ISS. 1, JANUARY 2003

REPARSE POINTS IN WINDOWS, THE NT INSIDER, VOL. 10, ISS. 1, JANUARY 2003

MANAGING ADDRESS SPACE INCREASES FOR IA64, THE NT INSIDER, VOL. 9, ISS. 4, JULY 2002

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BYTE RANGE LOCKING, THE NT INSIDER, VOL. 9, ISS. 3, MAY 2002

REFERENCE COUNTING FOR FILE SYSTEM FILTER DRIVERS, THE NT INSIDER, VOL. 9, ISS. 2, MARCH 2002

USING THE INVERTED CALL MODEL, THE NT INSIDER, VOL. 9, ISS. 1, JANUARY 2002

A REVIEW OF SYNCHRONIZATION PRIMITIVES, THE NT INSIDER, VOL. 9, ISS. 1, JANUARY 2002

NEW FILE SYSTEMS MATERIAL IN WINDOWS XP, THE NT INSIDER, VOL. 8, ISS. 4, JULY 2001

NAME TUNNELING IN WINDOWS 2000 FILE SYSTEMS, THE NT INSIDER, VOL. 8, ISS. 3, MAY 2001

WINDOWS NT SECURITY PART III, THE NT INSIDER, VOL. 8, ISS. 3, MAY 2001

OBSERVATIONS ON FILE SYSTEM FILTER DRIVERS, THE NT INSIDER, VOL. 7, ISS. 6, NOVEMBER 2000

ANALYZING A CRASH DUMP, THE NT INSIDER, VOL. 7, ISS. 2, MARCH 2000

WINDOWS NT SECURITY PART II, THE NT INSIDER, VOL. 6, ISS. 5, SEPTEMBER 1999

WINDOWS NT SECURITY PART I, THE NT INSIDER, VOL. 6, ISS. 3, MAY 1999

STRUCTURED EXCEPTION HANDLING, THE NT INSIDER, VOL. 6, ISS. 2, MARCH 1999

WINDOWS NT VIRTUAL MEMORY PART II, THE NT INSIDER, VOL. 6, ISS. 1, JANUARY 1999

WINDOWS NT VIRTUAL MEMORY PART I, THE NT INSIDER, VOL. 5, ISS. 2, MARCH 1998

ASYNCHRONOUS PROCEDURE CALLS, THE NT INSIDER, VOL. 5, ISS. 1, JANUARY 1998

HOW NT HANDLES I/O COMPLETION, THE NT INSIDER, VOL. 4, ISS. 3, MAY 1997

BUILDING IRPS TO PERFORM I/O, THE NT INSIDER, VOL. 4, ISS. 1, JANUARY 1997

THE LANMANAGER FILE SERVER ON NT, THE NT INSIDER, VOL. 3, ISS. 4, OCTOBER 1996

OPLOCKS ON WINDOWS NT, THE NT INSIDER, VOL. 3, ISS. 3, JULY 1996

USING THE NT CACHE MANAGER, THE NT INSIDER, VOL. 3, ISS. 2, APRIL 1996

LIFE IN THE FAST I/O LANE, THE NT INSIDER, VOL. 3, ISS. 1, JANUARY 1996

LAN EMULATION, IEEE COMMUNICATIONS, FALL 1994

DISTRIBUTED COMPUTING, ENCYCLOPEDIA OF COMPUTER SCIENCE & TECHNOLOGY, VOL. 30, 1994

OSF'S DISTRIBUTED COMPUTING ENVIRONMENT, UNIX REVIEW, JANUARY 1993

THE V OPERATING SYSTEM, BYTE MAGAZINE, NOVEMBER 1987