

MICHAEL L. BRUNDAGE

CONTACT michael@michaelbrundage.com

SKILLS Excellent speaking and technical writing skills.
Expert at JavaScript, Java, Perl, C, C++, C#, XSLT, and SQL.
Adept in Python, Objective-C, x86 and PPC assembly, PHP, Ruby, and many others.
Proficient in Unix, iOS, Mac OS, Windows, and Xbox development.

EXPERIENCE

Owner

Feb, 2009 – present
Synthient, LLC

- Developing independent projects.

Principal Engineer

Nov, 2012 – Jun, 2013

Unspecified Project

Amazon.com

- First engineer hired into major new business.
- Designed and implemented the technical architecture.
- Created demonstrations for the CEO.
- Represented Amazon at the MIT Media Lab.
- Hired more than 30 senior/Principal software engineers and research scientists.

Principal Engineer

Mar, 2009 – Nov, 2012

Search Experience

Amazon.com

- Changed Amazon Search page architecture to AJAX.
- Latency expert; drove company-wide latency reduction and advised external CEOs.
- Reduced Search page latency by 8x in 3 years.
- Ran one of the challenges in Amazon's first-ever internal Machine Learning HackDay.
- Implemented many Search page features, such as client-side error and event logging.
- Invented click prediction.
- Analyzed petabyte data sets of customer behavior and website latency.

Distinguished Architect

Dec, 2007 – Dec, 2008

Technology and Strategy

Yahoo, Inc.

- Advised the CEO and executive staff on deep technical strategy and M&A.
- Created the Cloud Computing and Audience Service Engineering organizations.
- Influenced major changes to Yahoo! Production Operations.
- Implemented iPhone applications and other technical demonstrations.
- Technical liaison for our AT&T relationship.

Senior Principal Architect

Apr, 2007 – Dec, 2007

Platform

Yahoo, Inc.

- Opened and staffed the Yahoo! Bellevue office.
- Helped create the Y!OS Yahoo! Open Strategy.
- Invented the Yahoo! Query Language (YQL).
- Implemented v1 of the internal Web Services toolkit.
- Acted as local "paranoid" (security architect).

- EXPERIENCE (continued)**
- Emulation Ninja** Nov, 2005 – Apr, 2007
Xbox Console & Consumer Software Microsoft Corporation
- Responsible for the Xbox 360 kernel and operating system.
 - Led the virtual Xbox performance team.
 - Shipped three system updates and four updates to backwards compatibility.
 - Implemented MP4 support for Xbox Live Video Marketplace and Zune connectivity.
- Software Design Engineer** May, 2004 – Nov, 2005
Xbox Software Team Microsoft Corporation
- Implemented major parts of the Xbox emulator for backwards compatibility.
 - Shipped the Xbox 360.
 - Created the compatibility beta program, FAQ, and customer support pages on xbox.com
 - Implemented parts of the Xbox 360 Dashboard and Guide.
- Technical Lead** Jan, 2002 – May, 2004
WebData XML Team Microsoft Corporation
- Invented the .NET XML query architecture and System.Xml.Query namespace.
 - Responsible for Microsoft's XML query optimizer for XQuery and XSLT.
 - Shipped SQL Server 2000 & 2005, Visual Studio 2005, Windows XP, and Office 2007.
 - Advised many other Microsoft teams and external customers.
 - Presented on Microsoft technologies at major industry conferences.
- Software Design Engineer** Oct, 1999 – Jan, 2002
SQLXML Team Microsoft Corporation
- Responsible for XPath to SQL translation.
 - Shipped SQL Server 2000 and four SQLXML updates.
 - Prototyped early XQuery functionality.
- Senior Software Engineer** Sep, 1998 – Sep, 1999
NASA Interferometry Science Center (ISC) Caltech / JPL
- Managed the ISC software development team.
 - Responsible for software supporting the Keck Interferometer in Hawaii, the Space Interferometry Mission, and the Spitzer Space Telescope.
 - Implemented terabyte-scale data archives, user interfaces, and numerical algorithms.
 - Created the ISC software development environment and processes.
- Computing Analyst** Jun, 1996 – Sep, 1998
Infrared Processing Analysis Center (IPAC) Caltech
- Responsible for astrophysics simulation software still in use today.
 - Implemented parts of AstroVR, a pioneering and influential early Internet project.
 - Created the IPAC Software Seminar Series.
 - Contributed to the 2-Micron All-Sky Survey (2MASS) project.

EDUCATION	Postgrad: Machine Learning Stanford University, Coursera.com	Apr, 2013
	Postgrad: Internet Multicast and Multimedia Technologies University of California, Los Angeles	Feb, 1998
	M.S. in Mathematics University of Washington	Aug, 1994 – Jun, 1996
	B.S. in Mathematics Caltech	Aug, 1990 – Jun, 1994
	<ul style="list-style-type: none"> • Elected Vice President of the incorporated Caltech undergraduate student body • Elected Chairman of the Board of Control (the Honor System executive committee) 	

PATENTS & AWARDS

More than a dozen patents pending in fields such as predictive analytics, latency reduction, time-series data analysis, and computer vision.

US Patent 8,682,964, Progressively loading network content	2014
US Patent 8,458,227, URL rescue by identifying information related to an item referenced in an invalid URL	2013
US Patent 8,438,279, Identifying content that is responsive to a request for an invalid URL	2013
US Patent 8,307,073, URL rescue by correction of encoding errors	2012
US Patent 7,519,577, Query intermediate language method and system	2009
US Patent 7,496,599, System and method for viewing relational data using a hierarchical schema	2009
US Patent 7,383,255, Common query runtime system and API	2008
Microsoft Gold Star	2006
US Patent 7,146,352, Query Optimizer System and Method	2006
Microsoft Gold Star	2003
NASA Grant NRA-96-10-OSS-055, A Collaborative Environment for the Space Interferometer Mission	1996
Caltech Hinrichs Leadership Award (outstanding graduating senior)	1994
Caltech Don Shepard Essay Contest Winner	1993
Caltech Robert Andrews Millikan Scholar	1992
Caltech Robert Andrews Millikan Scholar	1991
National Merit Scholar	1990

**SELECT
PUBLICATIONS**

XQuery: The XML Query Language

Michael Brundage.
Addison-Wesley, 2004.

Professional XML Databases

Kevin Williams, Michael Brundage, et al.
Wrox Press, 2000.

The Circumstellar Structure of the Class I Protostar TMC-1

Susan Terebey, David Van Buren, Michael Brundage, and Terry Hancock.
The Astrophysical Journal, volume 637, part 1 (2006), pp. 811-822.

Microsoft SQL Server 2000 XML Features

Michael Brundage. TechEd Europe, Barcelona Spain, 2001.

Developing XML-Driven Applications with SQL Server 2000

Michael Brundage, Andrew Conrad.
TechEd Atlanta, GA and TechEd Europe, Barcelona, Spain, 2001.

XML Views in SQL Server 2000

Michael Brundage. XML DevCon Fall, San Jose, CA, 2000.

A Candidate Protoplanet in the Taurus Star Forming Region

Susan Terebey, Dave Van Buren, T. Hancock, D. L. Padgett, and Michael Brundage.
Astrophysical Journal Letters, August, 1998.

10 Micron Search for Cool Companions of Nearby Stars

Dave Van Buren, Michael Brundage, Michael Ressler, and Susan Terebey.
The Astronomical Journal, August, 1998.

Near-infrared Hubble Space Telescope Images of Nearby Protostars

Susan Terebey, Dave Van Buren, T. Hancock, D. L. Padgett, and Michael Brundage.
Bulletin of the American Astronomical Society, Vol. 30, May, 1998.

An Object-Oriented Approach to Radiative Transfer in Arbitrary Media

David Van Buren, Michael Brundage, Susan Terebey.
Bulletin of the American Astronomical Society, Vol. 29, December, 1997.

From the Even Cycle Mystery to the L-Matrix Problem and Beyond

Michael Brundage.
Thesis, University of Washington, 1996.

AstroVR, An On-line Collaborative Environment for Research in Astrophysics

Dave Van Buren, Michael Brundage, Pavel Curtis, and Dave Nichols.
Proceedings of the 1994 ADASS Conference, Baltimore. November, 1994.