Member of the Ubuntu Server Team
Software Developer (Rails, Ruby/C++/Java)
Design/Build Private & Hybrid Clouds
Enterprise Integration (Chief Architect for $30MM J2EE project in the Energy Industry)
3D Modeling/Simulation/AI
Ph.D. Physics

ıent History

oftware Engineer - Ubuntu Server
anonical Ltd. (Global)
011–Present

art of the team working to build juju, a new suite of DevOps tools for Ubuntu Server. Developing juju charms to chestrate various services throughout the enterprise. Designing / developing APIs and tools surrounding the juju evOps stack. Developing service stacks for everything from Hadoop clusters to complex large-scale infrastructures like Vikipedia. Integrate / test deployments on bare metal as well as EC2, Eucalyptus, and OpenStack cloud infrastructures.

loud Architect
rchethought (Austin, TX)
010–2011

rchethought is a consulting firm specializing in designing and building **private and hybrid clouds** for colleges and niversities around the world. This helps universities take advantage of more efficient Virtualization technologies, ovide infrastructure as a service within the university, and safely explore various emerging Digital Library chnologies.

esign and Deliver all software, networking, configuration and monitoring needed to set up and support a Cloud omputing System, Storage Systems, and cloud-based High Performance Computing Systems. Help integrate the Cloud omputing System with existing systems and applications throughout the university environment.

his includes a web-based (Rails) Cloud Management Console with account, instance, image, and storage management.

echnology Used:
ucalyptus, AWS/EC2 API, RightAWS, Ruby, Rails, Chef.

hief Scientist
gile Dynamics (Austin, TX)
005–2011

gile Dynamics is a consulting firm specializing in **data-driven decision making**, helping businesses adopt a more uantitative view of everyday business decisions. We provide the leadership, business acumen, and technical expertise ecessary to adapt business processes and implement the enterprise software needed to support this process across various fferent industries.

esigned and built a **data-driven decision support system** for the Jamaican Ministry of Education. This USAID-onsored project serves primary and secondary educational institutions throughout the nation and gives the Ministry eviously unknown visibility into the state of education on the Island. This application was built using Rails and scales ynamically in EC2 using Chef.

esigned the next generation of application for a company offering Fleet/Inventory Tracking services. This company ovides web services and whitelabel web portals to track assets using their proprietary GPS tracking hardware. The new esign helped prepare for **integration into Machine to Machine (M2M) data market**.

rovide **ad-hoc data-munging** services to a variety of businesses. Designed/built web-based bulk data importers for xtbook distributors to manage inventory from publishers with various proprietary and standard (ONIX) formats.

web-based applications and Facebook apps using Ruby on Rails.

rovided quantitative marketing tools and services for the visualization and **modeling of social networks**. Allowed r trend identification and analysis, growth rate predictions, and what-if scenarios for various network and Web-2.0 usinesses. This was developed using Ruby/MySQL with Rails/GraphViz visualization.

rovided environmental simulation and modeling solutions to track pollutants in the Florida Everglades. Created umerical **hydrodynamic mass balance models** that are used to calculate tax incentives/penalties for surrounding ommercial land. This was developed using Java/SWT/WebStart and interfaced with a variety of legacy apps and atabases.

echnology Used:
uby, Rails, Java, SWT/JFace.

hief Technology Officer
ational Systems (Houston, TX)
002–2005

eveloped business models for the Energy Industry and then designed / developed systems to implement these models. or regulated energy utilities, this allows for efficient daily operations and longterm optimization decisions. Directed elivery of two complete product lines, Rational Pipe(TM) and Rational Catalyst(TM), from conception.

ational Pipe is software designed to **manage the commercial activities of interstate natural gas pipelines**, including ontracts, CRM, tariffs, capacity release, nominations, allocations and invoicing. It was the result of a 140+ man-year, int development project between Rational Systems and a major US interstate natural gas pipeline, utilizing Rational's ights-Based engine (pat pending).

hief Architect for this $30M project delivered on time and on budget. Provided Technical leadership for a team of pproximately thirty developers and twenty testers. Directly developed components across the system, including: gas ow, physical pipe, scheduling, and the JMX-based system management console.

ational Catalyst is a business simulation and analysis framework used in energy production, exploration, and gathering. is software that enables **collaborative business modeling** by integrating small disparate models of various aspects of e business together making model data available across the enterprise. Catalyst packages data mining, revision control r both data and models, and various visualization tools including configurable executive dashboards into one complete ackage for business analysis.

hief Architect for the Rational Catalyst team of four developers and two testers. Directly developed add-in interface omponents for Microsoft Excel 2000 using MFC/ATL/COM plugins in C++.

echnology Used:
va, C#, C++, J2EE Design/Development, .NET, Business modeling, MFC, ATL, COM, Tibco, SQLServer 2000 with nalysis Services, Enterprise Hardware (Compaq/HP) running Windows 2000 Server, Windows 2003 Server, Red Hat 9 d Fedora Core 2-3, Microsoft SharePoint, Linux.

ead Software Architect
he AEgis Technologies Group, Inc. (Austin, TX)
000–2002

rincipal architect of AEgis' AcslXtreme(TM) product line, a suite of **commercial simulation tools** based on the industry andard ACSL(TM) (Advanced Continuous Simulation Language). Leader of a development team responsible for factoring and modernizing the ACSL language as well as developing a complete modern development environment r simulation engineers. Responsible for coordinating all technical activities and artifacts throughout the lifecycle of the roject.

irectly developed software components across the product line: for ACSL language translation, compilation, terpretation, symbolic mathematical manipulation, numerical integration and analysis, numerical optimization,

ORBA, SOAP, HLA, ANTLR, lex/yacc, UML, RUP, GoF design patterns, object-oriented design, component-based esign, Windows .NET, Various flavors of UNIX/Linux (some components native, UI(MFC) components ported using ristol porting tools).

oftware Developer
'esson International, Inc., now Adacel Technologies, Ltd. (Austin, TX)
996–1998

esponsible for creating and maintaining realistic aircraft movement and intelligent pilot behavior in a multi-platform, :aleable **air traffic control (ATC) simulator**.

ıtegrated tower ATC, radar ATC, and flight simulators in order to simultaneously train tower controllers, radar ontrollers, and pilots. Distributed the system using CORBA and the US Defense Department's High Level Architecture HLA). Spearheaded the simulator port to C++ on a POSIX-compliant kernel.

ı addition to movement and pilot intelligence in a soft real-time environment, responsibilities included on-site ıstomization for systems installed in Alaska and Hong Kong, graphics programming using SGI's IRIS Performer toolkit, ıd developing networking tools to assist in distributing the simulators.

echnology Used:
/C++, Tcl/Tk, UNIX and Win32 systems programming, (soft) real-time process scheduling/event management, resource onflict resolution/management, network programming using TCP/IP and NetBIOS, Silicon Graphics O_2, Onyx Reality ngine, and Onyx2 Infinite Reality high-end graphics systems running IRIX(UNIX), i386 hardware running Linux, /in95, NT-4.0, and an in-house real-time OS over DOS/4GW.

ıstructor
ept. of Physics - UT Austin (Austin, TX)
994–2000

hysical Science I: Mechanics (AI, Instructor of Record)

ab for Engineering Physics I (TA)

ab for General Physics II (TA)

ecturer
ustin Community College (Austin, TX)
995–1996

ıtro to General Physics I

ngineering Physics I

n

h.D. in Physics, 2000
he University of Texas at Austin

Dissertation: "Dynamical Stability of Quantum Algorithms." Supervisor: E.C.G. Sudarshan

Created a numerical model to characterize noise in Grover's quantum search algorithm. This model was then used to determine the maximum amount of noise that the bare algorithm can tolerate before failing. This is useful in determining exactly which emerging technologies will prove to be viable for implementing quantum computers.

Technology Used:
C++, Perl, BASH script, LaTeX, numerical solutions to ODEs, randomization, various matrix calculations (using blitz++, TNT, and LAPACK).

.S. in Physics, 1992
he University of Texas at Austin

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Clint Byrum, Mark Mims, Juan Negron. *DevOps on Ubuntu Server*. 2012(in progress).
Luis J. Boya, Mark Byrd, Mark Mims, E. C. G. Sudarshan. "Geometry of n-state systems, pure and mixed". *J. Phys.: Conf. Ser. 87 012006*. 2007.
Mark Mims. "Dynamical Stability of Quantum Algorithms". *Dissertation, ISBN:0-493-13630-4*. The University of Texas at Austin. 2000.