

# Ryan Chapin

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3302 Fox Valley Drive, West Friendship, Maryland 21794

## Full-Stack Lead Software Engineer

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A software engineering architect and leader with a business focus and a broad, in-depth skill set that encompasses building and managing teams, developing business opportunities and managing relationships, and building flexible technology to consistently create long-term value.

## Technologies

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OS	Languages	Servers	IDEs	Multimedia	Other		
Linux	ActionScript	Perl	Eclipse	Audacity	Ant	JDBC	Memcached
Mac	C/C++	PHP	IntelliJ	Flash CS3	AWS	JMS	Section 508
Solaris	CSS	Python	NetBeans	Illustrator CS3	Cassandra	JQuery	Subversion
Unix	HTML5	Shell Scripting	JBoss	Photoshop CS5	Chef	JSON	Swing
Windows	Java	SQL	Jetty	Premiere	EJB	JSP	SWT
	JavaScript	MySQL	MySQL		Fabric	JUnit	VMWare
		Oracle Db 11g	Oracle Db 11g		Git	Kafka	Zookeeper
		RabbitMQ	RabbitMQ		Hadoop	KVM	XML
		Tomcat	Tomcat		Hive	Maven	

## Certifications

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Sun Certified Java Programmer, SE6

## Professional Experience

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### Hughes Network Systems, LLC

February 2016 - Present

*Senior Big Data/Hadoop Developer*

- Architecting and building the next generation, Big Data, analytics platform for HNS North America Division.

### RedOwl Analytics, Inc.

April 2015 - January 2016

*Lead Software Engineer*

- Lead teams on multiple high-profile projects. Work with product owners, VP, and C-level management to plan and manage sprints, define user stories and acceptance criteria, and estimate and schedule tasks.
- Design systems, write code, develop unit and integration tests and write detailed documentation for new product features and enhancements.
- Serve as a Product Development to Operations team liaison resulting in more detailed documentation, smoother releases, and less operational downtime.
- Profile, debug, and troubleshoot production and development systems to identify bugs, bottlenecks, and areas for performance improvement. Refactor, test, and confirm improvements and fixes in development and production environments.
- Increased operational efficiency, stability, reliability, and resiliency of the email and chat ingest pipeline by taking a proof of concept and developing it into a production-grade streaming ingest system. The system was implemented with a combination of Postfix, a custom Postfix content-filter, RabbitMQ, and a custom Elasticsearch plug-in.
- Improved efficiency of Operations Team by developing detailed SOPs for deployments, upgrades, and migration procedures.
- Increased visibility into production systems and enabled the ability to troubleshoot and optimize sub-systems by designing, developing, and deploying a standardized logging, metrics, and monitoring system that included log aggregation via rsyslog, Ganglia, and Nagios.

### Financial Industry Regulatory Authority

May 2014 - April 2015

Contracted through TEK Systems

*Senior Software Engineer/Hadoop Developer*

- Migrated and rewrote complex, multistaged SQL queries written for Oracle 11g, Netezza 7.0 and Greenplum 4.2 enterprise RDBMS appliances as Hive HQL queries or custom MapReduce algorithms to run on AWS EMR clusters.

- Increased team efficiency by 30% by developing an SOP for query migration, and developing a test-harness to run HQL and MapReduce jobs in a development environment while maintaining production ready source code.
- Increased Hive HQL functionality and maintainability by developing custom Hive UDFs and UDTFs. Some were developed as generic utilities that could be used across the entire project. Others were developed to satisfy specific logic requirements that are not possible to implement in SQL, or where performance requirements dictated custom development.
- Increased team productivity by developing a suite of custom development tools in Java, Bash, and Perl. The tools enabled one-to-one, direct comparison of engineered QA data to development output data to aid in and debugging.
- In conjunction with the Systems Engineering and Infrastructure departments, coordinated the set-up and configuration of the development environment.

## **Lotame Solutions, Inc.**

**March 2013 - May 2014**

### *Lead Software Engineer*

- Led multiple engineering teams working directly with product managers, client facing teams, and VP level engineering stakeholders to groom the backlog, enumerate themes and epics, develop user stories and tasks, and provide day-to-day sprint management.
- Trained new team members and mentored engineers across teams.
- Increased developer efficiency and created a standard development environment for writing and testing MapReduce code for the core statistical analysis subsystem to include automated replication of a complete mirror of the production HDFS structure and RDBMS schema.
- Designed, developed, and maintained custom MapReduce jobs running against a 1.6PB Hadoop cluster of approximately 3,000 cores.
- Developed an end-to-end solution for data collection which dynamically adapts at runtime to read and write first or third party cookies depending on customer configuration and client-side environment. Implemented with a combination of JavaScript, Servlets, and custom server-side daemons.
- Extended the capability of the MapReduce code base to analyze data segmented by universe (desktop web browser, mobile web, mobile app, set top box, etc.). This involved Servlet development, protocol buffer design, MapReduce code, RDBMS schema evolution and refactoring SQL stored procedures.
- Increased efficiency of the daily MapReduce data analytics processing by refactoring system-wide data flows: redesigned protocol buffer definitions and refactored multiple MapReduce jobs to save approximately 25% of the overall cluster daily CPU time each day.

## **Northrop Grumman Information Systems**

**April 2010 – November 2012**

### *Senior Software Engineer*

- Co-architected and developed a real-time, behavioral based, zero-day malware detection framework designed to stop threats based on the behavior observed and categorized by malware candidates and not binary hashes.
  - Deployed to protect against spear-phishing attacks by intercepting and analyzing e-mail attachments as well as an on-demand malware analysis tool for cyber analysts.
  - Developed multi-threaded daemons designed to integrate any type of malware detection tool into the framework.
  - Architected and developed a complete, flexible, and modular web based dashboard to provide real-time system status and metrics and web based tools for malware analysis. Implemented with a JavaEE MVC system that featured a high-concurrency, server-side layer and AJAX client-side components.
- Guided design and development of a high-profile, cutting edge R&D project that featured high rate data ingest, HDFS and RDBMS storage, concurrent query and query federation, and a Facebook style UI/visualization layer which led to the award of a \$500M contract.
  - Enabled the means to tune systems by leading the design and development of a real-time, metrics charting/data visualization system for 120+ node cluster of servers to include both server side and client side subsystems.
  - Increased overall system speed and efficiency by designing and developing high rate, high concurrency, Java daemons.
- Increased team productivity and the ability to quickly respond to customer requests for metrics UI application changes and additions by building a flexible, extensible metrics UI tool kit.
- Contributed to organizational knowledge by writing detailed documentation and SOPs, and training and mentoring junior engineers.
- Reduced time to deploy sub-systems by researching, recommending, extending, and integrating open source

software packages.

- Expanded leverageable and maintainable code bases by administration of source code in version control repositories.
- Provided a big-picture perspective on projects requiring effective, eye-catching UIs, and solid, flexible technology.

### **Nuts & Bolts Interactive, Inc.**

**December 1997 – April 2010**

*Owner, Manager, Web Developer, Software Engineer, Systems Administrator*

- Founded NBI in 1997 with the mission to provide an integrated set of marketing, custom graphic design, web applications development, and hosting services for small businesses.
- Developed internal marketing strategy to include inbound marketing, automated outbound marketing and lead generation systems, trade shows and public speaking engagements, and the cultivation of strategic partnerships.
- Developed sales strategy to include ideal client profile, sales forecasting, product and service pricing.
- Developed new business opportunities, qualified prospects, developed project specific service offerings and pricing, and negotiated client contracts.
- Consulted with business owners and sales and marketing teams to develop comprehensive, strategic integrated marketing plans to include both offline and online systems.
- Responsible for hiring and managing a 12 person team to include graphic designers, web developers, software engineers, systems administrators, sales and administrative staff.
- Developed sticky, recurring revenue offerings that were affordable to deploy and enabled clients to easily manage their websites, online marketing systems, and hosted e-mail systems by co-developing formVista, an extensible, LAMP stack, web applications and lead generation framework.
- Maximized flexibility and minimized customer response time by designing, building, and maintaining all Internet infrastructure: web/database/e-mail/DNS servers, routers, power backup, and automated data backup and disaster recovery systems.
- Increased exposure and traffic for client websites with 508 compliant, search engine optimized, cross-browser compliant UI design and development.
- Provided comprehensive training and support for all of the systems deployed for customers.

### **Westat, Inc., Graphics Department**

**November 2004 – July 2009**

*Software Engineer and Web Applications Developer (Part-time)*

- Led design and development teams for department projects collaborating with management to determine specific requirements and roles for project staffing and made staff assignment recommendations.
- Increased internal and external customer satisfaction by managing complicated data and database driven technology projects to completion on time and under budget.
- Kept projects within budget by guiding requirements analysis meetings, developing detailed project specifications, and designing and developing the core set of tools and templates for production staff.
- Increased sales as a technical sales consultant.
- Extended departmental capabilities, cut production time by 2/3, and increased profit margins by developing an extensible, Rich Media Framework (RMF) in ActionScript/Flash for deploying data-driven, interactive multimedia applications.
  - RMF instances can be deployed on CD, Desktop or the web without any changes.
  - Designed and architected the system to enable multiple developers and designers to work concurrently on modular sections of large scale projects that would typically include up to 2,000 interactive screens.
  - Developed a set of custom Flash Components, that were easy for designers to use, which enabled production staff to develop interactive, feature rich applications.
- Increased overall department efficiency, institutional knowledge, and redundancy by training co-workers, systematizing repetitive tasks, and developing detailed SOPs.

### **Indigo Group Omnimedia, Inc.**

**March 1996 – December 1997**

*Art Director*

- Led 5 person web design, multimedia development, and graphic design staff to produce an integrated set of marketing materials for websites, traditional print media, websites, and multimedia CD-ROM.
- Designed and programmed interactive multimedia applications and animations for both desktop and web

deployment.

- Designed web pages, post-processed graphics, and wrote custom HTML UIs and interactive components.
- Trained and mentored new design and multimedia employees.

## **Bethesda Softworks**

**April 1995 – October 1995**

*Team Lead, 3D Animator, Artist, and Game Designer*

- Led a 3 person level-design team coordinating activities with the Lead Software Engineer and Lead Game Designer.
- Designed and developed a modular system of 3D objects and textures to enable the creation of any configuration of game level with reusable objects.
- Created 2D and 3D computer graphics and animations.
- Trained new team members.

## **Patents**

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Calvin H. Smith, Kenneth Maclean, Jason J. Liu, Stephen Mann, Wendy Mann, Ryan Chapin, 2015.

**System and method for advanced malware analysis.** U.S. Patent 9,106,692 B2, filed January 31, 2013 and issued August 11, 2015

## **Education**

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**BA, cum laude; University of Maryland, College Park (UMCP)**

**May 1994**

Major: Art Studio with concentration in Illustration and Painting

**Certificate, East Asian Studies; UMCP**

**May 1994**

Concentration: Japan

**Animation Arts; Cherry Hill, New Jersey**

**September 1994**

Studied traditional animation and video editing