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LANGUAGES:

GoLang, Scala, Python, node.js, Javascript, HTML5, CSS, Cypher, SPARQL (limited), HL7 (medical data), KML (geospatial)

TOOLS & TECHNOLOGIES:

Docker, Apache Hadoop, Apache Tika, Elastic Marvel, Maven, Ubuntu, Git, SVN, TFS, Amazon EC2, Microsoft Azure, Mocha, PHPUnit, Selenium, Siesta

FRAMEWORKS & LIBRARIES:

Tensorflow, spaCy, Spark, D3.js, AngularJS, Socket.io, Express Framework, jQuery, Meteor (limited)

APIS & PROTOCOLS:

Beanstream, Facebook/Open Graph, Gnip, Google Maps, LDAP, Mapbox, Moneris, OAuth 2.0, PayPal, PSiGate, Qmail, RabbitMQ, RESTful, Twitter

DATABASES & STORAGE:

Elasticsearch, MongoDB, Redis, HBase, Neo4j, HDFS, MySQL, Amazon S3, Memcache, Microsoft SQL Server

CURRENTLY FOCUSED ON:

GoLang + Tensorflow + spaCy

EXPERIENCE:

Sybaris Analytics Corporation (Toronto, ON) — Dec 2017 to Present

Personal Project

- GoLang, Node.js, Python, spaCy, Tensorflow, RabbitMQ, MySQL, Redis, Elasticsearch, Angular, Bootstrap, Docker
- Built image classifier using Tensorflow to identify over 60 fruits and vegetables, including 9 varieties of apples
- Used Natural Language Processing (NLP) to read and understand the context and subjects discussed in written content

Uncharted Software (Toronto, ON) — May 2016 to May 2018

Senior Software Architect

- Scala, Spark, Node.js, Python, spaCy, Elasticsearch, RabbitMQ, HBase, Redis, RDD, Docker
- Prototyping and building complex causal graphs utilizing RDF, Turtle (TTL), and SPARQL
- Building scalable, distributed computing systems with RabbitMQ/Spark
- Using Natural Language Processing (NLP) and spaCy to create a Named-Entity Recognition (NER) and feature extraction service
- Working closely with our data scientists to implement emerging Machine Learning (ML) technologies in Python
- Maintained and extended critical data pipelines in Scala, Spark and Hadoop
- Optimized Elasticsearch models
- Build data parsing and normalizing engines with Scala + Spark
- Research and new technologies

Isobar Canada (Toronto, ON) — Feb 2016 to Mar 2016

Data Visualization Developer

- D3, node.js, Meteor, Express framework, Sass
- Built proprietary, interactive data visualization tool for client to analyze complex data relationships
- HTML5 based chart designed to work with both mobile and desktop devices

Mayo Clinic (Rochester, MN) — Oct 2014 to Oct 2015

Elasticsearch Specialist

- Elasticsearch, Elastic Marvel, MongoDB, node.js, socket.io, Express framework, hapi.js, RabbitMQ River, Highcharts, D3, MapReduce, YAML
- Built abstraction / macro scripting language to manage complex Elasticsearch mapping schemas
- Built extensive set of interactive medical/statistical data visualization charts using D3 for real-time big data analytics
- Built high-throughput and fault-tolerant river to pre-compute and pipe MongoDB, and RabbitMQ data into Elasticsearch
- Built a tool which simplifies the creation of complex Elasticsearch queries
- Transformed HL7 V2 RIM and FHIR from Apache Spark into a schema optimized for complex analytics in Elasticsearch
- Refactored experimental tools written by previous developers into a standardized technology stack, and generalized libraries wherever possible
- Presented work at monthly Lunch-and-Learn workshops to share knowledge with different departments at Mayo Clinic
- Presented work at 2015 IEEE Big Data Conference in Silicone Valley (see “*Conference Papers And Presentations*” section below)
- 1 Trillion electronic medical records (EMR) will be processed by these services

Genworth, Division of GE Capital (Oakville, ON) — Jun 2014 to Jan 2015

Big Data SME and Developer

- Elasticsearch, Java, node.js, socket.io, Express framework, Extjs, Selenium (tests written Java), MQTT protocol
- The “go-to-guy” regarding all things Elasticsearch
- Ensuring that Elasticsearch is configured in a secure manner
- Demonstrated new ways that Big Data technologies can improve the utility of Genworth’s data through monthly Lunch-and-Learn talks, which have inspired several spin-off projects as a result
- Designed Elasticsearch mapping rules that will help find similar addresses and names, despite the many possible permutations with them
- Shared knowledge of how Elasticsearch works “under-the-hood” to help illustrate how we can leverage this new technology with the team
- Identified new ways of identifying fraudulent transactions that were previously very time consuming
- Identified how Genworth could replace one of their “data-scrubbing” vendors with an internal solution via Elasticsearch, and save the company tens of thousands annually
- Implementing “bleeding-edge” capabilities of Elasticsearch, only days after they were released

Jobteria (Toronto, ON) — Aug 2010 to Jan 2015

Big Data Developer and Team Lead

- Apache Hadoop 2.x, Apache Pig, HDFS, Java, node.js, Elasticsearch, Redis, Javascript, socket.io, backbone.js, underscore.js, Express Framework, OAuth 2.0, Twitter API, RESTful web services, Highcharts
- Built engine that identifies trends in technology, and highlights which skills a developer should acquire based on the skills currently mentioned on their resume
- Built engine to find jobs based on the skills mentioned on a user’s resume
- Prototyped an early (and very different) concept of project with PHP, MySQL, Laravel, Qmail protocol

Tekmart International (Toronto, ON) — Apr 2014 to Oct 2014

Front-to-back Developer

- node.js, MongoDB, Elasticsearch, AngularJS, Javascript, jQuery, HTML, CSS, MMM (mustache, hogan.js), Express Framework, Zurb Foundation, Sass, Responsive Web Design
- Content-management-system (CMS), built with Zurb Foundation and MongoDB
- Custom equipment-comparison system built on Elasticsearch

Hackathon: “Hacking Health” by SickKids (Toronto, ON) — May 2014 (48 hrs)

Back-end Developer

- node.js, Neo4j, Javascript, D3.js, Responsive Web Design, Express framework, Zurb Foundation, MMM (mustache, hogan.js), RESTful
- Architected and designed a graph-database to compare the similarities and healthiness between children's foods at the grocery store
- Built a complete CMS to add products, ingredients and nutritional facts on a per-barcode basis. Product details to be added by others in team.
- Built a custom visualization of these foods with D3.js library, highlighting healthy/unhealthy ingredients
- Built APIs to accept UPC codes, and return product details to the complementary iOS App (built by another team member)
- Received a lot of support on Twitter for having a technology stack “on the tech edge”
- Have since become close friends with most people I met on our team

STIHL (Boston, MA) — Mar 2014 to May 2014

Front-to-back Developer

- node.js, Elasticsearch, Javascript, jQuery, HTML, CSS, Express Framework, Backbone.js, Zurb Foundation, Sass, Ajax, Highcharts
- Interactive internal reporting tool to analyze sales
- Inherited project from previous developer who had abandoned it

Hot Wheels, Division of Mattel (Toronto, ON) — Mar 2014

Arduino and Back-end Developer

- node.js, socket.io, AngularJS, JavaScript, jQuery, Ajax, HTML, CSS, Arduino, Raspberry Pi
- Built front-end web interface to place web users in a virtual queue, where they could eventually have a limited amount of time to interact with a physical Hot Wheels display, which was located remotely, and viewable via synchronized web cam
- Built an application to reside on a Raspberry Pi, that controlled several Arduino devices that actuated servos, allowing remote web users to “virtually” play with a Hot Wheels display
- Solution featured at The Art Gallery of Ontario

Infomart, Division of Postmedia (Toronto, ON) — Feb 2012 to Mar 2014

Architect & Lead Back-end, Javascript and Big Data Developer

- Apache Hadoop 1.x, node.js, PHP, Elasticsearch, MongoDB, MySQL, MSSQL, Gnip Powertrack, Gnip EDC, Javascript, jQuery, FQL, Twitter API, Facebook API, YouTube API, Highcharts, Hootsuite API, Google Maps API, OAuth2.0, Memcache, Amazon S3, Bootstrap.js, PHPUnit
- Designed the technical architecture for application overhaul
- Worked with the project manager to write job descriptions and hire a development team
- Established best-practices, and prepared development style guides for the team
- Performed technology testing to identify best technologies for the project, proposing several options with advantages/disadvantages to each
- Primary developer of all big data content (currently about 10 million tweets per month / over 100 million documents in total)
- Primary Javascript developer (which was extensive in this project)
- Built a proprietary visual pie-chart using Javascript and SVG only (no framework), to meet specific needs of the project

Wylde About Health Inc (Toronto, ON) — Aug 2009 to Feb 2014

Architect & Lead Developer

- PHP, node.js, MySQL, Amazon S3, Javascript, jQuery, HTML, CSS, CakePHP, CodeIgniter, PSiGate, Google Analytics, E-commerce
- Lead design and development of new Electronic-Medical-Record (“EMR”) management system called *MyStatus*
- Designed system architecture to share EMR records with 3rd party medical labs using raw HL7 V2 formatted data
- Ensure development is compliant with industry regulations including ISO 13485:2003

- Conduct regular security tests to ensure data is safe from SQL injection, session/cookie hijacking, brute-force attacks, DDoS, prepared (bound) SQL statements, weak user-passwords, etc.
- Worked with partners including CP24, Research-in-Motion (“RIM”), and Sharecare by Dr. Oz to ensure timely and targeted content delivery
- Maintain and update existing application that provides service up to 3,500 daily users

Ink Entertainment (Toronto, ON) — Jul 2013 to Nov 2013

Principal Developer

- PHP, MySQL, Javascript, HTML, CSS, jQuery, Laravel, Google Maps API
- Hired to build a proprietary Customer Relationship Management (“CRM”) system to track high-profile VIPs
- Interviewed key people throughout the organization to identify the needs within each department
- Established timelines and checkpoints for the solution
- Key concern for security of given the nature of the application (which contains personal contact information for *A-List* celebrities)

Tootama.com (Toronto, ON) — Dec 2011 to Jun 2013

Founder & Lead Developer

- PHP, MySQL, Javascript, HTML, CSS, jQuery, CodeIgniter, Twitter API, Facebook API
- Designed tool to understand what is being said about a brand, in consideration of the many synonyms of that brand (e.g. “McDonalds” and “McD’s” represent the same subject: “McDonalds”)
- Trends are contextually analyzed to understand if something positive or negative is being said about that brand
- System relies on regular expressions for pattern and proximity matching
- Follows a distributed-computing and load-balancing design pattern to help mitigate heavy processing requirements
- Technology can identify the difference between “Apple” the technology company, and “Apple” the fruit
- Clients included CTV/Bell Media, Bryce Wyld and CondoOutlet.com

NHP Research Inc. (Toronto, ON) — Oct 2011 to Jan 2012

Lead Developer

- PHP, MySQL, Javascript, jQuery, HTML, CSS, CodeIgniter, Amazon S3
- Developed EMR platform for HealthWithCare to conduct clinical drug trials
- Back end patient-data aggregation and cleansing for preparation to drug manufacturers
- Conduct regular security tests to ensure system is secure from SQL injections, session/cookie hijacking, brute-force attacks, etc.

AppetiteApp.com (Toronto, ON) — Jan 2011 to Oct 2011

Lead Developer

- PHP, MySQL, C# (for desktop POS system), HTML5 (for mobile app), PSiGate (for payment gateway), and Google Maps API. CakePHP (for cloud admin tools), custom MVC framework for HTML5/jQTouch mobile web app), Facebook API
- Lead development of mobile ordering system for restaurants and sports stadiums
- Managed developers at two offices in Toronto using Agile methodology
- Developed stand-alone Javascript plugin for customers to add to their website, which could submit data via Ajax (without jQuery or Prototype)

Kobo (Toronto, ON) — Oct 2009 to Oct 2010

Developer & Lead Email Marketing Developer

- PHP, Javascript, jQuery, HTML, CSS
- Advised team on best-practices for building, testing and deploying mass-market emails based on my experience doing same for Apple Canada
- Built koboereader.com and HTML email templates

- Managed weekly email deployments of 20k to 30k

NAD83 (Toronto, ON) — Mar 2010 to Jul 2010

Lead Developer

- PHP, MySQL, Javascript, jQuery, HTML, CSS, Google Maps API, KML
- Designed a passive, geospatial check-in system
- Prototyped solution using the haversine formula to calculate proximity of user to a “deal” on a map, which was defined as a polygon
- Experimented with more accurate cartography systems including the Geodetic Reference System of 1980 (“GRS 80”) and the North American Datum of 1983 (“NAD83”)
- System designed and tested in Toronto and Vancouver, but scalable to support North America and UK
- System allowed polygons to be created through an interactive web interface, or uploaded via KML file

Gorrie Marketing (Toronto, ON) — Nov 2009 to Mar 2010

Developer

- PHP, MySQL, Javascript, jQuery, HTML, CSS
- Developed resource-sharing and ordering system to connect Gorrie Marketing with their key clients including Research-in-Motion, Benjamin Moore and Public Mobile
- Worked with 4 other developers on all aspects of project using SCRUM

Pink Martini Clothing (Toronto, ON) — Nov 2008 to Oct 2009

Developer

- PHP, MySQL, Javascript, jQuery, HTML, CSS, SEO, E-Commerce
- Built E-Commerce website
- Managed SEO strategy

Jib Design & Advertising (Toronto, ON) — Feb 2007 to Oct 2008

Technical Director

- PHP, MySQL, Javascript, jQuery, HTML, CSS
- Upgraded the university registration system for Apple Education Store from WebObjects to PHP
- Lead development of HTML emails for Apple Canada, including production and deployment to appropriate demographics
- Security audits to prevent SQL injection, Session/Cookie hijacking, etc
- Reverse engineering of Google PageRank formula for better understanding of SEO strategies
- Designed multilingual solutions based on client needs and budget. Projects were developed using LAMP, ASP (design requirement). Moneris API, integration with Athens stock exchange API

Philips Electronics Ltd. (Markham, ON) — Jun 2002 to Aug 2006

Business Data Analyst

- C#, Microsoft SQL Server, VB.NET, Microsoft Access, VBA, Microsoft Excel, Business Objects, SAP, Wal-Mart RetailLink
- Built planogram modeling system in C# and Microsoft SQL Server
- Built tools that simplify the calculation of customer loyalty program (see “Awards” section below) with Microsoft SQL Server and C#
- Built sales and marketing reporting tools in VBA for Excel with Microsoft Access
- Automated internal reporting processes with VBA, VB.NET (earlier) and C# (later)
- Simplified and documented internal material maintenance processes with UML diagrams
- Wal-Mart “Category Captain” for automotive division

NetSpindle Inc. (Markham, ON) — Jan 2000 to May 2002

Developer

- VB6, ASP, Microsoft Access, Javascript, HTML, CSS
- Lead development of retail Point-of-Sale (“POS”) system with support for touch-screens, receipt printers, and other hardware devices
- IT support for restaurant POS systems
- Website maintenance and development

EDUCATION:

Ryerson University, Accounting, 2005

AWARDS:

2005, Quality Improvement Competition World Final, Philips Electronics “for solutions built to manage customer loyalty program”

CONFERENCE PAPERS AND PRESENTATIONS:

Accepted

Li, P., Yates, S. N., Lovely, J. K., Larson, D. W. (2015, October). *Patient-Like-Mine: A real time, visual analytics tool for clinical decision support.*

Poster presented at the 2015 IEEE International Conference on Big Data, Santa Carla, CA, USA.

Submitted

Li, P., Yates, S. N., Lovely, J. K., Larson, D. W. (2016, January). *Bringing Healthcare Analytics into Point-of-Care.* Paper submitted to iHealth 2016

Clinical Informatics Conference presented by the American Medical Informatics Association (AMIA), Minneapolis, MN, USA.