

POLYGLOT SENIOR SOFTWARE ENGINEER, DEVOPS, SRE



github.com/wilmoore



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"I am looking to take on a Senior engineer role with the intention to work toward a lead role with an innovative company that is looking to leave a positive mark on the world; ideally by truly caring for the well-being of human beings. I am a collaborative full-stack software engineer and open-source advocate with experience across the entire tech stack. I stay up-to-date with modern tech such as new programming languages, frameworks, and libraries. I continuously expose myself to new and uncomfortable tech to keep myself humble and hungry."

PROGRAMMING LANGUAGES

Languages I've shipped to production, refactored to another language, authored an open-source library or framework for.

PYTHON RUST * ERLANG / ELIXIR	
ERLANG / ELIXIR	
HP	
UBY	
OTLIN *	
GO *	
AVA *	
REGEX, AWK, SED	
QL (DDL/DQL/DML, SPROCS, TRIG	GERS, VIEWS)
SHELL SCRIPTING (SH, BASH, ZSH,	FISH)
MARKUP / STYLE (HTML/5, CSS/3, S	ASS, LESS, JSX)

DATABASES

Databases I've deployed and/or managed in production scenarios, or I am actively learning.

RDBMS (POSTGRESQL, MYSQL, SQL SERVER, ORACLE)

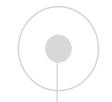
NOSQL (DYNAMODB, REDIS, MONGODB)

GRAPH (NEO4J) *

SEARCH (ELASTICSEARCH)

WORK EXPERIENCE

My contract and direct hire experiences with detailed depictions of notable projects I've delivered and in some cases, the reasons behind the tech decisions.



Senior Full-Stack Software Engineer, devOps, SRE

(CONTRACT) MAR 2018 - FEB 2019

Nordstrom - Denver, CO (40% REMOTE)

[API ARCHITECTURE + IMPLEMENTATION, BACKEND, DEVOPS] Designed and implemented a near real-time messaging system with message fanout arriving via SSE. SSE (EventSource) was choosen over Websockets as my experiments and research revealed that SSE is superior in simplicity of debugging, testing, and deployment over Websockets, especially when client-to-API two-way messaging is not needed. Deployment is automated via Terraform and CloudFormation. The RESTful Swagger API (OpenAPI) written in YAML format is fronted by AWS API Gateway and proxies to AWS Lambda which persists messages to DynamoDB for long-term storage, which subsequently emits an event to a **DynamoDB Stream** and is picked up by an AWS Lambda function which produces to a Kafka topic. The Kafka topic is watched by a Node.js worker process and eventually fanned out to clients via SSE.

[FULL-TEXT SEARCH SCHEMA DESIGN, IMPLEMENTATION, BACKEND] Designed and implemented an Elasticsearch schema and cluster for a search/filtering strategy which replaced an existing **Redis** cluster which was previously merging results in-flight which was less than efficient and not very flexible in terms of agility or surviving change. The Elasticsearch cluster was deployed in AWS on EC2 instances. I crafted and documented several Elasticsearch queries per the team's requirements as well as delivered performance metrics via Artillery-based load testing. Integrated a simple Elasticsearch HTTP client along with the queries into an existing Node.js/TypeScript API (not originally maintained by me or my main team – helped another team out with this implementation).

[DB SCHEMA DESIGN, DB INDICES, DEVOPS, BACKEND] Contributed various production features and enhancements to a Node.js Apollo GraphQL API deployed to AWS ElasticBeanstalk fronted by an Nginx load balancer in a VPC. I increased response throughput by +3x (at least) by way of adding database indices and pagination in hot portions of the source. The performance enhancment was verified with pre and post load testing with Artillery. Wrote custom express middleware as a provider for mocking the calls to the Node.js GraphQL API for Cypress.io testing a React front-end application.

[DOCUMENTATION, DEVOPS, SRE] Authored sections of a Docker/Kubernetes deployment tutorial. Authored an incident response guide: a guide for on-call SREs which included examples of previous incident responses along with screenshots. Built dashboards, monitors and alerts in Datadog and Kibana, with integration to PagerDuty and automated with terraform.



Senior Full-Stack Software Engineer

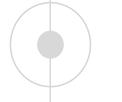
(CONTRACT) OCT 2017 - MAR 2018

Charter Communications - Greenwood Village, CO

[API ARCHITECTURE + IMPLEMENTATION, BACKEND, DEVOPS] Designed and implemented a Node.js API with the IBM/ StrongLoop Loopback API framework. API was consumed by a Vue.js single-page-application. Developed custom Loopback middleware and mixins for uploading and persisting attachments in base64 format.

[DB SCHEMA DESIGN, DB INDICES] Using raw SQL DDL, designed and created MySQL database schemas to support new features and enhancments in the API.

[DOCUMENTATION] Authored a new developer onboarding guide which covered getting started with contributing to the project, getting around the company's campus, and how to setup the VPN.



Senior Full-Stack Software Engineer

(CONTRACT) FEB 2016 - SEP 2017

Shutterstock - Denver, CO (80% REMOTE)

[API ARCHITECTURE + IMPLEMENTATION, DB SCHEMA DESIGN, DB TUNING] Maintained and refactored an e-commerce Node.js API on top of the express framework backed by a MySQL database using test-driven development (TDD). Implemented a currency exchange API with Ruby and the Sinatra framework backed by a MySQL database using test-driven development (TDD). Contributed to Node.js orchestration APIs and built JavaScript API clients using test-driven development (TDD), including npm packaging and artifact release into a private npm registry. Evolved the schema of a MySQL database through features and enhancements through DDL and DML SQL change scripts. Introduced a message queuing strategy through use of the RabbitMQ message broker. Authored design docs, developer guides, and architecture diagrams as well as facilitated architecture reviews.



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"I contribute to open-source projects frequently. If you will allow me, I will work hard to help you to shepherd your company's open-source initiatives; If you will allow me, I will help transform and/or maintain a modern technical stack that will keep developers happy, hungry, and engaged. I enjoy building products, taking on challenging projects and constantly humbling myself by failing fast and learning in the process. I prefer simple, clean, pragmatic tools and solutions."

My process: (1) R&D (2) pencil and paper sketches then hi-fidelity mockups/prototypes (3) design (4) code experiments and refactoring and TDD (5) production readiness.

CLOUD TECHNOLOGIES

Technologies that I've worked with in the cloud from the perspective of architecture as well as implementation.

COMPUTE (AWS EC2/ELASTICBEANSTALK, HEROKU)

FUNCTIONS (AWS LAMBDA, SERVERLESS FRAMEWORK)

NOSQL (AWS DYNAMODB, ELASTICACHE)

RDBMS (AWS RDS POSTGRESQL & MYSQL)

STORAGE (AWS S3, RACKSPACE CLOUD FILES)

QUEUE (AWS SQS, RABBITMQ)

MESSAGING (AWS SNS)

DATA WAREHOUSE (AWS REDSHIFT)

CONFIGURATION (TERRAFORM, AWS CLOUDFORMATION)

LOAD BALANCING (AWS ELB)

DNS (AWS ROUTE 53)

CDN (AWS CLOUDFRONT)

MONITORING (AWS CLOUDWATCH, DATADOG, KIBANA)

STREAM (AWS KINESIS, KAFKA)

NETWORK (AWS VPC)

WEB SERVICES

Web service (or micro-service) technologies in which I've implemented the producing side (the service itself) and/or a consuming client.

REST & RESOURCE-BASED SERVICES (OPENAPI/SWAGGER)

GRAPHQL (APOLLO-BASED & VANILLA NO-FRAMEWORK)

SOAP (CLIENTS)

WORK EXPERIENCE

My contract and direct hire experiences with detailed depictions of notable projects I've delivered and in some cases, the reasons behind the tech decisions.

Senior Full-Stack Software Engineer

Aetna (formerly iTriage) - Denver, CO (80% REMOTE)

(CONTRACT) MAY 2015 - FEB 2016

[API, BACKEND, DEVOPS] Implemented and deployed Swagger APIs with Node.js, Hapi, and Docker. Contributed to analytics client libraries in JavaScript and Objective-C. Contributed to a Ruby/Sinatra RESTful API. Contributed to an analytics platform built on top of AWS Redshift. StatsD instrumentation, e2e testing with WebdriverIO/Selenium and Elasticsearch R&D.

[**DEVELOPER TOOLS**] Built reusable project **boilerplates** for **scaffolding** backend **APIs** including documentation with consideration for developer experience (**DX**).

[FRONT-END] Built a secure message center as an AngularJS single-page-application (SPA) so users could login to view sensitive messages from their health provider in a modern user interface.

Senior Full-Stack Software Engineer

(CONTRACT) AUG 2014 - MAY 2015

Welltok - Denver, CO

[API ARCHITECTURE + IMPLEMENTATION, BACKEND, DEVOPS] Designed and implemented Several micro-service APIs with Node.js and Express which powered the core platform for CafeWell Concierge. Concierge which was comprised of a native mobile application for health care benefits recipients and a web application for administration. APIs were deployed via **Docker** to **AWS**ElasticBeanstalk with some assets being deployed to **AWS S3** and ditributed through **AWS CloudFront**. The administration dashboard was written in **Ruby/Rails** and the **Rails Admin** package with deployment to **AWS ElasticBeanstalk** with **Docker**.

[NLP / AUTO-COMPLETE] Utilized Elasticsearch's NLP capability to expose a Node.js RESTful API for auto-complete with the Koa HTTP library. The auto-complete service was consumed by the Concierge mobile application.

[EXTERNAL SERVICE API INTEGRATIONS] As Concierge was meant to be a "cognative" application, there was some integration with IBM Watson (the cognitive computing engine that that won Jeopardy).

Designed and implemented a **RESTful API** using the **Node.js Koa framework** with integration with the **Active.com API** (http://developer.active.com/docs/read/v2_Activity_API_Search). Packaged as a **Node.js module**, **Open-sourced the code**, and published to the **npm registry** (https://www.npmjs.com/package/active-activity-search).

[ETL] Migrated a legacy Python ETL project to data transformations powered by Node.js streams. Packaged the core helpers as a Node.js module, Open-sourced the code, and published to the npm registry (https://www.npmjs.com/package/text-pipe).

Senior Front-End Software Engineer

(CONTRACT) AUG 2012 - MAY 2015

Time Warner Cable - Broomfield, CO

Built an **HTML5 single-page-application** (**SPA**) and **HLS streaming video player** with custom scrubbing features. This system was targeting a **whole-home IP TV** (cable set-top box) system targeting millions of customer homes. Utilized **test-driven-development** (**TDD**) to implement and deliver features, bug-fixes, enhancements, and performance tuning.

Automated testing w/ Mocha, Jasmine, Sinon, Chai, and PhantomJS. Build automation with GNUMake and CI/CD with Jenkins. IaC via Puppet. Node.js for utility scripting, testing, and backend service stubbing.

Designed & Developed various HTTP API clients using **jQuery AJAX**, **Superagent**, **Promises**, higher-order functions, and "README"-driven development. API clients for retrieving and playing HLS streams as well as clients for retrieving emergency (**EAS**) notifications and application updates. Originally utilized **WebSockets** which were switched to **Server Sent Events**, **Mocha**, **Grunt**, **Gulp**, and **GNUMake**.



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My next challenge is to learn to be a competent and helpful Team Lead that leads with heart. I'm currently doing the following to prepare for this:

- (1) Reading "The Manager's Path" by Camille Fournier && "The Power of Vulnerability" by Brenè Brown
- (2) Learning to take rejections in-stride while gathering rejection reasons; this is a humbling exercise
- (3) Actively seeking mentorship

TEST FRAMEWORKS

Automated test frameworks that I have used and feel comfortable writing new or modifying existing test cases.

JS (TAPE, MOCHA, JASMINE, TESTEM, KARMA, JEST)

RUBY (MINITEST, RSPEC)

PHP (PHPUNIT)

API FRAMEWORKS

API libraries and frameworks that I've worked with.

NODE.JS (EXPRESS, KOA, FASTIFY, CONNECT, HAPI)

NODE.JS (APOLLO GRAPHQL, STRONGLOOP LOOPBACK)

PYTHON (FALCON) *

RUBY (SINATRA)

WEB & MOBILE FRAMEWORKS

API libraries and frameworks that I've worked with.

REACT, REACT NATIVE

VUEJS

ANGULAR

BACKBONE

CI/CD

Continuous Integration and continuous deployment systems that I've used, setup, and/or maintained.

JENKINS

GITLAB CI

SEMAPHORE, CIRCLE, TRAVIS

WORK EXPERIENCE

My contract and direct hire experiences with detailed depictions of notable projects I've delivered and in some cases, the reasons behind the tech decisions.

Senior Full-Stack Software Engineer

DEC 2011 - AUG 2012

Net-Results - Golden, CO

[FRONT-END, BACK-END, UI/UIX, DEVOPS] UI/UX design and implementation for a multi-tenant browser-based single-pageapplication (SPA) for a customer cloud file management interface using AWS S3 for file storage with a PHP 5.3 backend.

[FRONT-END, BACK-END] Contributed to a REST API for account provisioning and client maintenence with jQuery and backed by MongoDB. Contributed to a multi-tenant browser-based single-page-application (SPA) for building marketing landing pages using drag-and-drop using HTML5, CSS3, and YUI3.

(Team Lead) Senior Full-Stack Software Engineer

JUN 2010 - AUG 2011

Navigant (formerly Ethos Partners) - Denver, CO

[API ARCHITECTURE + IMPLEMENTATION, BACKEND, DEVOPS] Lead a team of 3 developers in successfully re-architecting a legacy monolithic web application that allowed health care providers to create health risk assessments (HRA) with custom business rules, branching, and demograph intake.

The original software was written with PHP 4.x which my team replaced with PHP 5.x using the Zend Framework and increased test coverage to 95% (an increase of 94%).

Full-Stack Software Engineer

(CONTRACT) OCT 2009 - JUN 2010

Kaango - Greenwood Village, CO

Designed, implemented, and documented a Full-Stack application utilizing PHP, HTML, JavaScript, and CSS for managing classifieds. Implemented a job queue on top of AWS SQS (Simple Queue Service) for handling batches of classified ads which were transformed before being persisted into a MySQL database as well as indexed into Solr for full-text search.

Designed, implemented, and documented a Full-Stack application utilizing PHP, HTML, JavaScript, and CSS for a question and answer website (similar to StackOverflow). Implemented an authentication and RBAC (Role Based Access Control) system in PHP. Refactored poorly performing **SQL** queries by **tuning indexes**. **Increased unit test coverage** from 3% to approximately 80%.

Full-Stack Software Engineer

(CONTRACT) MAR 2009 - OCT 2010

Reed Business Information - Highlands Ranch, CO

Gromwell IT

Introduced unit testing to the team. Re-factored tightly coupled code with inversion of control for better testability. Successfully recommended and utilized cross-browser testing tools. Implemented an Object-Oriented JavaScript based tool, which maps a list of valid CSS definitions to be imported and exported in bulk. Successfully streamlined the development team's hiring processes. Lead and organized weekly user acceptance testing walkthroughs for new features and enhancements.

Contributed to **launch** of a number of **high-traffic websites** such as:

furnituretoday.com, designnews.com, multichannel.com, controleng.com, mbtmag.com, mbtmag.com, and controleng.com.

Database Administrator, ERP & Subscriptions MGR.

NOV 2006 - MAR 2009

Gaiam, Inc - Louisville, CO

Managed continuity/subscription systems for *spiritualcinemacircle.com*. Developed a **SOAP** interface for retrieving data out of the ECOMETRY ERP system. Migrated an ECOMETRY system from HP 3000 MPE/iX to Windows/MSSQL 2005. Ported Suprtool ETL scripts to SQL, DOS batch, AWK, and Python scripts. Implemented configuration change management on Subversion. Integration with remote web services (SOAP and REST) including email subscription list synchronization. Managed the integration of **ECOMETRY** with a 3rd party fulfillment provider through batch processes and webhooks. This included a web-based AJAX interface for the fulfillment staff to **review** and **confirm** shipments.



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"I enjoy a team culture that fosters **role acceptance, trust, and communication**. This is critical for team cohesion. Some developers are **naturally open and vulnerable problem solvers**; others are information gatherers. I do not believe in demeaning people for being who they are. **Role acceptance** is not a mediocracy; We accomplish more being kind and educating and working within the strengths of our people."

WEB MAPPING

Web mapping libraries, frameworks, and Web APIs that I have worked with.

MAPBOX	
LEAFLET	
WEB APIS (GOOGLE MAP	S, MAPQUEST

CONTAINER PLATFORMS

Containerization platforms, including container orchestration platforms that I've worked with.

KUBERNETES (DEV DEPLOYMENTS)	DOCKER	
	KUBERNETES (DEV DEPLOYMENTS)	
MESOSPHERE (DEV DEPLOYMENTS)	MESOSPHERE (DEV DEPLOYMENTS)	

GRAPHICS, UI, DIAGRAMS

Vector graphics, photo editing, illustration, desktop publishing, UI prototyping, and diagramming programs I've worked with.

VECTOR (ILLUSTRATOR, AFFINITY DESIGNER, FREEHAND)

PHOTO (PHOTOSHOP, PIXELMATOR)

DIAGRAMMING (OMNIGRAFFLE, BALSAMIQ, LUCIDCHART)

PUBLISHING (PAGEMAKER, INDESIGN, QUARKXPRESS)

NOW LEARNING *

Technologies that I am currently actively learning are listed here. Because I'll run out of space here, look for items with an asterisk * next to them. Those are items that should also be here.

EEP LEARNING *	
ATA SCIENCE *	

MY PRODUCTS

Entrepreneurial product ventures as well as notable things I've published...

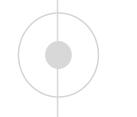


JAN 2019 - PRESENT

tipoffgame.com

I stepped in as **CTO** of a **mobile game** company called **TipOff**. The previous developer stopped working on the app and subsequently dissapeared and left the two co-founders **without source code** and no access to the **CMS** they were using to manage the game's content. I am currently working through a refactor and re-skin of the iOS version other devices coming soon.

As the source code was not available, I quickly learned the **React Native platform** with **expo** and **fastlane**. I was able to re-build the game from scratch in about 2-weeks. Though this was a minimal viable version of the game with some non-pertinent features missing; I had a working game ready to be published for **iOS**; though, I conceed that my builds were rejected several times for over one week before being accepted. I ran into various issues, mostly to do with screenshots; however, I also once attempted to publish an erroneous build; however, that experience taught me how to correctly version iOS builds for publishing through **expo**. Obviously **previous exposure to React** and the **npm ecosystem** helped keep the time to MVP relatively short.



Book (Author)

Inside GraphQL

DEC 2018 - PRESENT STATUS: Chapter 1 (started)

"GraphQL extensions" is a book that seeks to detail the internals of using extensions within GraphQL services. The book is targetting those looking to build powerful extensions or developers wanting a better understanding of how tools like Apollo utilize extensions to build awesome production quality features such as analytics.

Lead

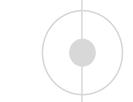
Lead Instructor, Full-Stack Software Engineering

DEC 2018 - PRESENT

Polyglot Software (Software Engineering Education)

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The current state of software engineering education does not scale well. I've mentored enough Junior software engineers to realize that most of their education stops as soon as they get hired. Some of the more dilligent that seek mentors do better; however, they are essentially cut off from their original source of education which is the bootcamp.



Full-Stack Software Engineering

Polyglot Software (GeoSpatial SaaS Application)

DEC 2018 - PRESENT

STATUS: UI (50%)

Pointmap is a GeoSpatial-based SaaS application that allows physical store owners with many locations (i.e. Apple) to provide a beautiful (and working) store locator which integrates into their existing website either by opening in a new window or via pop-over. We will in the future offer web component integrations with libraries such as React and Vue.



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"I have experience in many technologies; however, this is not interesting so much as I understand the following deeply and conceptually: The HTTP protocol, regex, approprate time for TDD, when, why, and how to use software design patterns, functional programming techniques, shell exit codes, web browser, b-tree vs inverted indexing, materialized views, and finally, the relationship between Linux containers (LXC) and Docker. Almost everything else is an implementation detail and a convenience on top of these concepts."

CERTIFICATIONS

Various technical certifications that I've successfully tested for and received or I am currently studying for and have a test date scheduled.

ZEND CERTIFIED ENGINEER - 2010 (ID: ZEND015278) https://goo.gl/T6TePT

MICROSOFT CERTIFIED PROFESSIONAL (ID: 2592587)

AWS CERTIFIED DEVELOPER - ASSOCIATE (JUNE 1ST 2019) *



FORMAL EDUCATION

Formal education including high-school, college, and university work. There is no college-level degree as I stopped short to persue entrepreneurial ventures.

PARAMOUNT HIGH SCHOOL (1992 - 1996 GRADUATED)

CSULB - COMPUTER SCIENCE & ENGINEERING (1996)

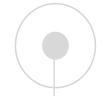
MOUNT SAN ANTONIO COLLEGE (1997 - 1998)

CSULB - INFORMATION SYSTEMS (1998 - 2000)

U. OF PHOENIX ONLINE - INFORMATION SYSTEMS ('02 - '03)

OPEN SOURCE, ARTICLES, CONFERENCE TALKS

Open-Source projects I've authored, articles I've written on software development, and conference talks I've given that may be moderately interesting to mention.



selectn.js

npmjs.com/package/selectn

RELEASED: MAR 2013

~368K downloads per month

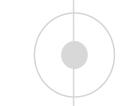
selectn.js is a curried property accessor function written in JavaScript for Node.js and the browser that resolves deeply-nested **object properties** via dot/bracket-notation string path while mitigating TypeErrors via friendly and composable API.

I wrote selectn because I noticed that most of my colleages on the HNAV project during my time at Time Warner Cable were repeating the following pattern throughout the codebase:

person && person.info && person.info.name && person.info.name.full

selectn.js allows you to refactor the above **to the following**:

selectn('info.name.full', person)



php-version

github.com/wilmoore/php-version

RELEASED: JAN 2012

@ GitHub 582 stars, 43 forks

php-version is a command-line PHP version manager. I wrote php-version so as to easily switch between different versions of PHP since at the time I was frequently switching between different client PHP projects. Though I've personally moved past using version managers as part of my everyday development workflow, I still maintain it as it's useful to many developers. I plan to re-factor it away from being a bash shell program to a compiled binary written in **rust**.



uuid-regexp

npmjs.com/package/uuid-regexp

RELEASED: JAN 2016

~5K downloads per month

uuid-regexp is a JavaScript regular expression (RegExp) for finding an RFC4122 compliant UUID in a string. While it may seem unintuitive that something as tiny as a single regular expression would need to be open-sourced, consider the fact that this problem no longer needs to be solved in the JavaScript ecosystem and if I missed some edge-case, it will be resolved in a single place.



curry2

npmjs.com/package/curry2

RELEASED: MAY 2015

~100K downloads per month

curry2 curries a binary function, also said to be a function that expects 2 parameters or arguments. curry2 is useful in JavaScript because unlike true functional languages where functions are automatically curried (i.e. Scala, Haskell), in order to approximate the same, a lot of boilerplate code must be written to wrap the function you want curried. There are other libraries that will wrap a function so it acts like a curried function; however, most of them trade-off clarity and performance for convinience of currying any

number of parameters. curry2 makes the trade-off of only supporting functions with an arity of 2 (thus a binary function) as I realized that I never had the urge to curry anything other than a **binary function**. You might also like to check out the following article that I wrote back in 2016 about some of the benefits of currying in JavaScript.

https://medium.com/@wilmoore/un-bind-your-js-with-curry-a8657a4138cb



Confoo Montreal Conference

https://confoo.ca/en/speaker/wil-moore

Conference Talks

10 advanced, yet digestible SSH techniques speakerdeck.com/wilmoore/10-advanced-yet-digestible-ssh-techniques

Painless, version-controlled database refactoring speakerdeck.com/wilmoore/painless-version-controlled-database-refactoring

DIY Private Cloud w/ VirtualBox and Chef confoo.ca/en/2012/session/diy-private-cloud-w-virtualbox-and-chef

2012 & 2013 Conferences

https://joind.in/user/wilmoore