

CHRISTOPHER S. CORLEY, PhD

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SKILLS

- Ruby
 - Rails
 - Sidekiq
- .NET
 - C#
 - Framework & Core
 - ASP.NET WebAPI
 - VB.NET
 - NServiceBus
- Python
 - Flask
 - Django
 - numpy
 - Jupyter Notebooks
- SQL
- JavaScript
 - Electron
 - Node
 - TypeScript
 - Stencil
 - Vue
- Tailwind CSS
- Rust (intermediate)
- Go (beginner)
- Git
- Elasticsearch
- Redis
- MongoDB
- RabbitMQ
- New Relic
- GNU/Linux
- Windows Server & IIS
- Kubernetes
- Docker
- Google Cloud Platform
- Amazon Web Services
- Azure DevOps
- GitHub Actions
- ArgoCD
- Nix
- Prometheus
- Grafana

PROFESSIONAL EXPERIENCE

Fathom Video, *Senior Software Engineer*

February 2021 – present | Remote

- Pair and mob programming to debug issues and incident outage response
- Assist and support users with installation and ongoing problem diagnosis
- Researched, designed, implemented, and maintained real-time event processing architecture that drives user-facing live recording features
- Overhauled CI/CD pipelines using GitHub Actions, Google Cloud Build, and ArgoCD to reduce build and deployment times from 45 minutes to 5 minutes
- Designed and implemented flexible and reusable Elasticsearch-based search architecture and backend maintenance support methodologies
- Build and maintain Grafana dashboards with Prometheus data for all services
- Re-implemented and refactored Electron-based application prototype into a robust cross-platform user desktop application
- Implemented backend and frontend features for editing videos and transcripts
- Designed and reimplemented security features and administrator dashboards
- Re-integrated OAuth sign-up flows for Microsoft, Google, and Zoom

Coyote Logistics, *Lead Software Engineer*

August 2019 – February 2021 | Chattanooga, TN, USA

- Manage deployments and releases of products owned by team
- Moved team from Scrum-style sprints to Kanban
- Gathered project requirements and documented work to be completed
- Explore and make development plans for team to execute
- Communicate project status, updates, and progress to management and business analysts
- Pair programming to debug issues or resolve development blocks
- Mentoring on test writing, refactors, and experimentation of changes
- Designed and mentored changes for implementing Elasticsearch script-based updates of time-critical and continuously updated data
- Designed, developed, and delivered project that overhauled company search functionality with Elasticsearch solution that replaced SQL-based queries with flexible type-ahead and fuzzy searching
- Implemented data collection and research for actual user search selections
- Lead project converting in-memory caching to Azure-hosted Redis
- Converted team build infrastructure to YAML-based Azure DevOps pipelines
- Build and maintain Kibana dashboards for Logstash logging

Coyote Logistics, *Senior Software Engineer*

April 2019 – August 2019 | Chattanooga, TN, USA

- Productionalized a data-science model in Python with Flask
- Improved model training efficacy, model deployment, and prediction robustness of data-science models
- Designed, implemented, and documented service changes that moved Elasticsearch clients to secure-connection clusters
- Designed, implemented, and documented an internal NuGet library for Elasticsearch index management

EDUCATION

PhD, Computer Science

University of Alabama

May 2018

Online Topic Modeling For Software Maintenance Using A Changeset-Based Approach

MS, Computer Science

University of Alabama

August 2014

BS, Computer Science

University of North Alabama

May 2011

OTHER EXPERIENCE

Open-source projects

- [whatthepatch](#): Python diff/patch parsing library, owner
- [Gensim](#): Python topic modeling library, previous core contributor

Research

instrumentation

- Language-agnostic source code parser using ANTLR4 grammars. Java, XML
- Application for source code search using linguistic similarity rather than keywords. Python

- Provided de facto implementations and patterns for the company that allows teams to rapidly develop and deploy Elasticsearch-based applications
- Installed and maintained Developer and QA Elasticsearch clusters

Coyote Logistics, Software Engineer

February 2016 – April 2019 | Chattanooga, TN, USA

- Designed and implemented Elasticsearch-based services to replace SQL searching and reports
- Architected A/B service that accounts for Elasticsearch index changes, removing service maintenance windows and allowing for continuous deployment
- Single-handedly upgraded company dependencies on Elasticsearch 1 to Elasticsearch 5, introducing architecture and development patterns for gradual upgrades on future major versions
- Reformulated critical Elasticsearch queries that brought mainline application query time from 30 seconds to sub-second searches
- Designed and implemented Elasticsearch jobs for identifying and removing old documents from long-lived indices reducing index disk sizes 85% or more
- Implemented major improvements to robustness and reliability of critical internal WCF location geocoding and distance routing service while introducing large refactors and increasing unit test coverage from less than 250 to over 1500
- Reduced requests to external service by 99% (200K/day to 2K/day)
- Researched and authored comprehensive service documentation
- Designed protocol and process for deprecating WCF service methods

ABB Corporate Research, Visiting Researcher & Research Developer

January 2015 – February 2016 | Raleigh, NC, USA

- Conceived, designed, and developed application for “[FlowLight](#)” project to reduce interruptions of knowledge workers using LED lights, including constructing and soldering physical research prototypes
- Developed and maintained research instrumentation software
- Maintained internal web service and Visual Studio plugin for internal users

University of Alabama, Graduate Research/Teaching Assistant and Mentor

Summer 2011 – Spring 2015 | Tuscaloosa, AL, USA

- Collaborated on literature review and systematic classification of security research topics through the NSA Grant: “Growing the Science of Security Through Analytics”
- Taught 1st & 2nd year students introductory and intermediate-level programming using Python on Linux-based systems
- Emphasized software engineering principles and best practices to students by example and student collaboration
- Lead, collaborated, mentored, and supervised undergraduates on research projects in Research Experience for Undergraduates program
- Published and presented peer-reviewed research papers in leading software maintenance conferences and workshops
- Peer-reviewed research papers and provided early feedback to authors