CHRISTOPHER S. CORLEY, PhD

https://christop.club https://github.com/cscorley

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SKILLS

- .NET
  - C#
  - Framework & Core
  - ASP.NET WebAPI
  - VB.NET
- Python
  - Flask
  - Django
  - numpy
  - Jupyter Notebooks
- SQL
- JavaScript
  - Node
  - React
  - Vue
- Rust (beginner)
- Git
- Elasticsearch
- MongoDB
- RabbitMQ
- IIS
- New Relic
- GNU/Linux
- Windows Server
- Azure DevOps

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

PROFESSIONAL EXPERIENCE

Coyote Logistics, *Lead Software Engineer*
August 2019 – present | Chattanooga, TN, USA
- Manage deployments and releases of products owned by team
- Moved team from Scrum-style sprints to Kanban
- Project planning and requirements gathering. Create and document work to be completed.
- Explore and make development plans for team to execute
- Communicate project status, updates, and progress to management and business analysis
- 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 for determining metrics on 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 2109 | 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.
  - Provides 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
- Decoupled all existing Elasticsearch clients from direct connections to clusters to use services instead

OTHER EXPERIENCE

Open-source projects
- <u>whatthepatch</u>: Python diff/ patch parsing library, owner
- <u>Gensim</u>: 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

- 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
- Iimplemented 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 "<u>FlowLight</u>" project to reduce interruptions of knowledge workers using LED lights
  - Designed, constructed, soldered, and manually tested research prototypes
- Developed and maintained research instrumentation software
- Maintained internal web service and Visual Studio plugin for internal users

University of Alabama, *Graduate Research Assistant*
Fall 2014 | Tuscaloosa, AL, USA
- Collaborated on literature review and systematic classification of security research topics though the NSA Grant: "Growing the Science of Security Through Analytics"

University of Alabama, *Graduate Teaching Assistant*
Spring 2013 – Spring 2014 | Tuscaloosa, AL, USA
- Taught 1st & 2nd year students introductory and intermediate-level programming using Python on Linux-based systems
- Emphasized software engineering principals and best practices to students by example and student collaboration
- Courses: Programming II & Software Engineering

University of Alabama, *Undergraduate Research Mentor*
Summer 2011 – Spring 2014 | Tuscaloosa, AL, USA
- Lead, collaborated, mentored, and supervised undergraduates on research projects in Research Experience for Undergraduates program
- Published peer-reviewed research papers in leading software maintenance conferences
- Presented research at international conferences and workshops
- Peer-reviewed research papers and provided early feedback to authors