Christopher Lin – Software Engineer

Casselberry, FL | (407) 924-6933 | christophercklin@gmail.com

Profile

Seasoned software engineer with almost 6 years of experience at Leidos, excelling in developing secure and robust software solutions. Leveraging a solid foundation in software engineering, I have transitioned into a back-end web developer role for the past 3 years, specializing in designing and implementing scalable server-side architectures, optimizing databases, and ensuring seamless integration with front-end systems.

Experience

SOFTWARE ENGINEER | SHARECARE | NOVEMBER 2020 – AUGUST 2023

- I was a back-end software engineer on the Search Engine Optimization (SEO) team. My main responsibilities were to update our NoSQL content database MongoDB and Content Management System (CMS) Magnolia, generate content reports for various teams, provide back-end support for our video team, and other various SEO activities that required scripting. Most of my work was done in Python using RESTful APIs as well as groovy scripts. I also had the opportunity to update our in-house RESTful APIs written in Kotlin. I gained valuable experience collaborating within a CI/CD pipeline based on GitHub, Drone CI, and Maestro, contributing to seamless software development and deployment processes.
- *Created a software suite written in Python to update and report on our content database*. Prior to my arrival, there was no infrastructure for reporting and updating our databases. Updates were done manually in our CMS before it was then published/updated to our databases. My scripts automated the overall updating and reporting process using RESTful APIs.
- *Provided back-end support to our video production team and created a video back system to save money on video storage.* Like my work with the SEO team, I created a software suite in Python that automated updates to and reported on their video management system Brightcove. Storing videos in Brightcove was expensive, so I created a back-up framework to store videos that were not currently needed. This involved automating the migration of videos from Brightcove to Amazon S3 and then from Amazon s3 to Studio Network Solutions (SNS), a media storage application. Additionally, another major project I worked on for the video team was automating the application of foreign language captions for their videos using Amazon S3 and Brightcove.
- *Improved our Search Engine Optimization (SEO) by sitemap testing and validation scripts in Python*. Sitemaps are files that provide information about what is on a website for search engines to find more efficiently. Our old sitemap framework was not correctly populating all the relevant data to our sitemap, so during the implementation of our new sitemap infrastructure, I was responsible for simulating the adding/removing from our sitemap files through publish/unpublish events for testing purposes. I was also tasked with creating an automated validation script that would match the contents of the sitemap with our content database to ensure the correctness of our sitemaps.

JUNIOR SOFTWARE ENGINEER | LEIDOS | FEBRUARY 2015 – NOVEMBER 2020

I worked on the Standard Terrain Generation Capability (STDGC) maintenance team as a software engineer. Our team's responsibility was to support our database production team, which created terrain databases for military training simulations. My main responsibility was to enhance existing software and create new software plugins for the database production team. These plugins and enhancements were centered around reducing the time it took to create databases and new features required by our customers. Most of my work was done in C++ and Python.

- *Added new features to and improved the speed of our model conversion tool.* Part of the database generation pipeline was converting 3D models from an open-sourced format to the simulator's proprietary format. The original tool I inherited could only be run serially. I updated the tool to be able to run multi-processed which reduced the overall processing time significantly. Additionally, the tool was originally designed to only convert static models. I worked with our modeling team to design dynamic models and enhanced the tool to convert dynamic models as well.
- *Increased database team productivity by creating plugins for ArcGIS Pro.* ArcGIS Pro is a Global Information System (GIS) software suite used to create 2D maps and 3D terrains. Firstly, I helped migrate our plugins and tools from ArcMap (an older generation GIS software package) to ArcGIS Pro. Secondly, I helped create plugins for ArcGIS Pro that helped create 3D terrains and automate the validation of the 2D maps and 3D terrains. Before the creation of these plugins, much of the validation was being done manually.

ENGINEERING INTERN | LEIDOS | AUGUST 2014 – FEBRUARY 2015

My main responsibility as an intern at Leidos was to test our Virtual OneSAF system. Virtual OneSAF is a simulation used by the army that provides physics based, entity-level models and behaviors for training and experimentation. After becoming familiar with the system through daily testing, I was tasked with fixing bugs with the model behaviors in Java; however, after a few bug fixes, I was hired as a full-time Junior Software Engineer and moved to Leidos' software maintenance team.

Portfolio

https://chriscklin.github.io/

The website provided is a link to my virtual portfolio where I have detailed the projects I have worked on to learn new programming languages and technologies. Below is a brief description of some of those projects.

Microblog

I created a microblog using Flask for server-side logic; SQLite for data storage; and HTML, JavaScript, and Jinja2 for the front-end. The home page displays the most recent blog posts made. Once users create an account, they can create a blog post, comment on blog posts, and like blog posts. Posts can also be viewed on a per user basis. The SQLite database uses one-to-many relationships to track users and posts; posts and comments; and comments and likes.

Library Backend

I created a backend system to track books in a library. The server-side logic is written in Go and the books are stored in a MongoDB database. The goal of the projects was to learn how to do CRUD operations with Go and MongoDB; otherwise, in a real-world scenario I would have used a relational database. Customers

can search for books, create an account, and check-out books once they have an account. Also, librarians can see which books have been checked out, which books are overdue, check-in books, and add/remove books from the library catalog. Access to those endpoints is handled using middleware.

Movie Recommender

I created a movie recommender API written with NodeJS. The API consists of three endpoints: one to add movies to the database (MongoDB), one to get the movies I the database, and one to recommend a movie based on a movie title. The recommender uses content-based filtering to recommend movies comparing movie's genre, actors, and directors.

Certifications

- **Programming Foundations with JavaScript, HTML and CSS (with Honors),** Coursera - 2023
- **Web Application Technologies and Django,** Coursera - 2023
- **Building Web Applications in Django,** Coursera - 2023

Education

BACHELOR OF SCIENCE IN COMPUTER SCIENCE | UNIVERSITY OF CENTRAL FLORIDA

BACHELOR OF ART IN MUSIC PERFORMANCE | UNIVERSITY OF CENTRAL FLORIDA

MASTER OF SCIENCE IN COMPUTER SCIENCE | UNIVERSITY OF CENTRAL FLORIDA
(Expecting to graduate December 2023)

Skills & Abilities

- Python
- C++
- JavaScript
- Amazon S3
- Flask
- Jinja
- ArcGIS Pro
- Django
- CSS
- Groovy
- Kotlin
- Git
- MongoDB
- HTML
- SQLite
- PostgreSQL
- HTML
- Go