Charmaine Liu

Computer Science MSc.

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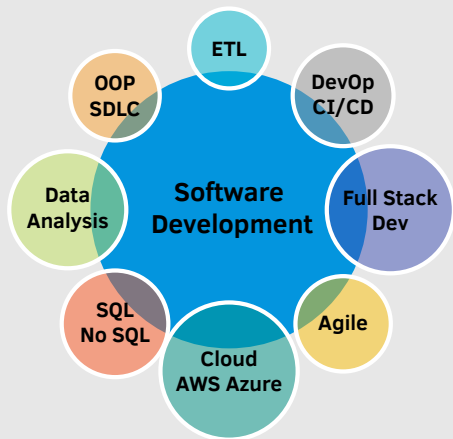🌐 charmaine.dev

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Skills

Overview

Programming

JavaScript • Matlab • Python

Bash • C/C++ • Node.js • SQL

C# • CSS • HTML • Java • PHP

Profile

Familiar with Linux, MacOS, Windows dev environments.

Expertise in Python programming, web development, web frameworks including Flask and Django.

Thorough working knowledge of Microservices, RESTful architecture and Docker container technology.

Hands on experience with Shell scripting, RDBMS & SQL, ETL, CI/CD, Data Analysis, OOP, SDLC, Agile, Version Control Tools such as Git, Project Management tools including Asana and Jira.

Work Experience

Jun 2021 – Present — **Software Developer** — The Citywide Group, Toronto, Canada
- Backend development and API integration for web based property management services. (**Python**, **Flask**, **Linux**, **Docker**, **MySQL**, **AWS**, **Prometheus**)

Jul 2020 – Jun 2021 — **Software Developer** — Cybage Software, Toronto, Canada
- Backend development and Unit testing for web based BI services (**Python**, **Flask**, **Linux**, **Docker**, **CircleCI**, **AWS ECS/SNS/SQS/S3**, **ElasticSearch**, **Splunk**)
- Introducing new features, trouble shooting and bug fixing for existing services (**NodeJs**, **Angular**, **Express**, **jQuery**)

Dec 2019 – Apr 2020 — **Software Developer** — StorageVault, Toronto, Canada
- Fullstack web development for CMS platforms(**Python**, **Django**, **PostgreSQL**, **JavaScript**, **VueJs**, **Sass**)
- Development and Deployment support for Micro-services architecture (**Bash**, **Docker**, **AWS EC2/ECR/EKS**, **Kubernetes**)
- ETL and data integration for marketing data reporting and analysis with **SOAP** and **REST** APIs (Facebook Ads, Google My Business, Google AdWords, Semrush, Tustpilot, Bing Ads, etc.)
- Trouble shooting and bug fixing for existing services (**PHP**, **symfony**, **twig**, **Bolt CMS**, **MySQL**, **Apache2**, **Vagrant**, **WordPress**)

Mar 2019 – Oct 2019 — **Software Developer** — Indoc Research, Toronto, Canada
- Backend development (user/data management, provenance of data and metadata, email services, etc) of a medical research data portal, implementing microservices architecture (**Flask**, **SQLAlchemy**, **Jinja2**, **Python**, **PostgreSQL**, **Redis**, **Solr**, **LDAP**)
- Built RESTful APIs to facilitate analysis on medical data and big data research (**Flask**, **Pandas**, **Python**, **Spark**)
- Deployment and configuration support for production environment (**Linux**, **Dockerized instances** of **Elasticsearch**, **Kibana**, **Spark**, etc., web servers including **Apache 2** and **Nginx**)

Oct 2018 – Jan 2019 — **Software Engineer** — DMTI Spatial, Toronto, Canada
- Backend development of data importing and interpolation services for a GIS platform with emphasis on scalability (**Node.js**, **Linux**, **Elasticsearch**, **Docker**, **SQLite**, **Shell Scripting**,**VMware**)
- Built, deployed and documented RESTful APIs compatible with OpenAPI standards (**.Net Core**, **SQL Server**, **Azure**, **Swagger**)
- Built testing and bench-marking tools for web APIs to guide future development (**JavaScript**, **Node.js**)

May 2017 – Aug 2017 — **Intern/Programmer Analyst** — China Development Bank HQ, Beijing, China
- Requirement analysis for a mobile app and enhanced user experience for non-tech end users (**UML**, **RFI/RFP**, **UX analysis**)
- Coordinator, assisting technical collaboration with multidisciplinary teams from China Telecom

Jun 2013 – Dec 2016 — **Research Assistant** — Memorial University of Newfoundland, St.John's, NL Canada
- Model development and numerical simulation/analysis of artificial and biological neural networks

Sept 2012 – Dec 2014 — **Teaching Assistant** — Memorial University of Newfoundland, St.John's, NL Canada
- Code review and code testing, violation of honor code detecting (**C/C++**, **Fortran**, **Python**, **R**)
- Inquiries and feedback management for quality improvement in undergraduate teaching. Trouble shooting as lab technician (**Linux**, **Windows**)

Academic Projects of Note

Delay Differential Equations and Bifurcation Theory in neural networks

- Detected hidden bifurcations in an artificial neural network to validate theoretical predictions, conducted simulations and visualizations of complex DDE models using **Matlab** and **Maple**

Education

2012 – 2017 **MSc., Computer Science** — Memorial University of Newfoundland, Canada
2011 – 2012 **Master's Candidate, Biomedical Engineering** — Beihang University, China
2007 – 2011 **BSc., Computer Science** — Northeastern University, China