

SKILLS

Expertise:

Backend Engineering, ETL, Data Engineering, Data Visualization/Analysis, VR (Immersive Environment) Systems

Recent Environment:

Python, Shell Scripts, Go, etc

AWS, Docker, Flask, GraphQL, JSON, XML, RabbitMQ, Kafka, Flume, Hadoop, Git, GitHub, GitLab, TeamCity, Jenkins, Pipenv, NGINX, SQLAlchemy, SQLite, MySQL, PostgreSQL, mongoDB, Redis, Terraform, GCP, etc.

Others | Past Environment:

C/C++, Java, Fortran, Pascal, Assembly, BASIC, Haskell, HTML, VRML, Lisp, Tcl/Tk, etc.

CUDA, FFmpeg, CAVELib, OpenGL, STL, VRPN, Kivy, Boost, GD, Qt, DICOM, Motif, etc.

Spoken Languages:

English (fluent), Japanese (native)

EXPERIENCE

Software Engineer in Backend Engineering, **Grabango**

11/2022 - 06/2023, Berkeley, CA

Grabango is 100+ person start-up company which offers checkout-free technology for grocery/convenience store chains

Environment: Python, Shell Script, Docker, SQLite, SQLAlchemy, PostgreSQL, mongoDB, GitHub, Jenkins, GCP, etc.

- Developed to improve cashier-free checkout transaction infrastructure to serve API endpoints
- Developed to extend POS/pricing service to handle complex/combined sets of promotions and tax reporting
- Developed test utilities for pricing/tax/promotion calculations against ingested data model and historical/external data for extended unit-testings and accuracy improvement measures by code changes

Software Engineer in Backend Data Platform Engineering, **HouseCanary**

01/2020 - 09/2022, San Francisco, CA

HouseCanary is 150+ person start-up company, which serves various housing market data and valuations

Environment: Python, Shell Script, Go, Flask, GraphQL, SQL, AWS, Docker, Terraform, NGINX, ELK stack, GitLab, TeamCity, etc.

- Developed for multi-threaded micro-service data platform infrastructure to serve API endpoints on AWS ECS
- Developed for the query quality monitoring infrastructure with tracing/logging across all data platform services
- Developed/Maintained for resource scaling/monitoring/alarm infrastructure as code across all data platform services

Software Development Engineer in Backend/Data Engineering, **Perfect Price**

08/2015 - 08/2019, San Francisco/Oakland, CA

Perfect Price is 10+ person start-up, which serves optimal pricing data for e-commerce

Environment: Python, Java, Shell Script, SQL, AWS, Kafka, Flume, Hadoop/Pig, etc.

- Developed for batch ETL pipeline and related management tools
- Deployed messaging pipeline for data collection
- Developed internal tools, such as continuous integration, alerting, database migration
- Managed AWS resources as AWS administrator, created company system/network security
- Implemented/Documented/Deployed all engineering aspects of SOC 2 certificate requirements

Software Developer in R&D Seismic Data Processing,

Halliburton | Landmark Graphics Corp.

06/2014 - 05/2015, Denver, CO

Landmark Graphics is a branch of Halliburton (60K+ employees), which develops software suites for oil and gas exploration

Environment: Java, C, Fortran, Shell Script, Lisp, etc.

- Developed geophysical data processing software modules for the software suite
- Developed module/extension-management GUI tool, enabling secure and trusted software management

Research Engineer/Scientist Associate in Scientific Visualization and Data Analysis,

The University of Texas at Austin, Texas Advanced Computing Center

07/2003 - 08/2012, Austin, TX

Texas Advanced Computing Center is one of the largest high-performance computing center, which serves academic research nationwide

Environment: C/C++, Shell Script, Unix Tools, Python, Ffmpeg, CAVElib, OpenGL, STL, VRPN, Kivy, Boost, OOPic, ParaView, Amira, VTK, etc.

- Developed software tools/workflow for processing large-scale scientific/engineering data of various kinds, such as 3-D geometry, multi/high-dimensional volume, finite element, and etc, for visualization and analysis
- Developed software tools for parallel workflow to accelerate existing data processing as much as 100+ times
- Deployed immersive environment (CAVE) system; 360-degree 3-D stereo display system with 10+ projector and head tracking system, which involves with both hardware/software integration and development, enabling one of very few operational immersive systems in the nation to display scientific data
- Developed software/API/hardware for in-house-built systems, such as virtual keyboard and wireless connectivity with auxiliary keys/switches, and haptic feedback for the immersive environment, and multi-touch table screen
- Developed video processing engine for THE OPEN VIDEO PROJECT, which is the first free academic video server, creating various media types and meta-media via functions, such as scene change detection, animated GIF, fast play clip, and etc.
- Developed paint program for in-house multi-touch screen system, demonstrated at IEEE Supercomputing
- Deployed in-house webcasting/recording infrastructure for remote trainings
- Maintained visualization lab functionalities and proctors as the lab manager for internal projects/tasks
- Supported researches as a data visualization/analysis consultant nation-wide via academic e-science computing network (TeraGrid)

Software Developer in MRI Systems, **Hitachi Medical Corporation**

01/2003 - 06/2003, Kashiwa-city, Chiba Japan

Hitachi Medical Corporation is the manufacture of Hitachi's medical scanners

Environment: C/C++, Motif, DICOM, etc.

- Developed for imaging software components of Hitachi MRI medical scanners
- Developed planning/specification for new imaging system
- Developed test for inter-vendors DICOM connectivity/compatibility
- Researched import/export and privacy regulations, such as encryption and HIPAA, for US market

Artist/Designer for Computer Game Development, **HouseWorks Software**

08/1995 - 03/1996, Austin, TX

HouseWorks Software is 4 person start-up company, which creates first person perspective 3-D shooting game

- Created game GUI, level/stage, enemy characters, and environmental texture library for 3-D first-person perspective shooter game

INTERNSHIPS / RESEARCH ASSISTANTSHIPS

Software Developer Summer Intern in R&D Graphics,

Halliburton | Landmark Graphics Corp

05/2013 – 08/2013, Houston, TX

Landmark Graphics is a branch of Halliburton (60K+ employees), which develops software suites for oil and gas exploration

Environment: C/C++, Java, Shell Script, etc.

- Developed a user-interface plug-in for multi-touch display, enabling complex but intuitive navigation in 3-D space

Graduate Research Assistant in Geophysics, EDGER FORUM,

The University of Texas at Austin, Jackson School of Geosciences / Institute for Geophysics

09/2012 - 05/2014, Austin, TX

EDGER FORUM is a geophysics research group under Jackson School of Geosciences and Institute for Geophysics at The University of Texas at Austin

Environment: C/C++, CUDA, Fortran, Shell Script, etc.

- Developed GPU code for the performance optimization and analysis of convolution process and GPU memory type/use for sub-surface acoustic wave propagation modeling/simulation

Please refer to the EDUCATION section below for the download link to the thesis

Research Engineer Intern / Undergraduate Research Assistant, The Center for Computational Visualization,

The University of Texas at Austin, Oden Institute for Computational Engineering and Science

06/1998 - 01/2001, Austin, TX

The Center for Computational Visualization is a research group, which specializes in the visualization of scientific/engineering data

Environment: C/C++, Tcl/Tk, Shell Script, VRML, etc.

- Developed data processing and validation tools for multidimensional scientific/engineering data
- Built on-demand data processing flow for the visualization of scientific/engineering data repository

EDUCATION

M.S. Geosciences/Geophysics: The University of Texas at Austin, Jackson School of Geosciences

Thesis: Analysis of GPU-based convolution for acoustic wave propagation modeling with finite differences

(<https://repositories.lib.utexas.edu/handle/2152/25746>)

B.A, B.S. Computer Sciences: The University of Texas at Austin, Department of Computer Science

B.F.A. Photo/Electronic Imaging: University of Massachusetts Dartmouth, College of Visual and Performing Arts