# Makoto Sadahiro

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## 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, FFmepg, 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

## 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