Makoto Sadahiro

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SKILLS

Expertise:

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

Recent Environment:

Python, TypeScript, Shell Scripts, Go, etc

AWS, Docker, Django, Flask, GraphQL, JSON, XML, RabbitMQ, Kafka, Flume, Hadoop, Git, Jenkins, Pipenv, NGINX, SQLAlchemy, ClickHouse, Redis, SQLite, MySQL, postgreSQL, mongoDB, 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

Senior Software Engineer in Backend Data Platform Engineering, **RealGeeks** **10/2023 - present, remote**

Real Geeks is about a 100 person company, serving the real estate market as a part of Fidelity National Financial (FNF).
The TruBase team provides data platforms and analysis to sibling/partner companies.

Environment: Python, TypeScript, Shell Script, Django, React, Docker, ClickHouse, PostgreSQL, Git, etc.

- Developed data platform to serve with API endpoints, used by FNF companies
- Developed web app to server real estate market statistics data to replace one of FNF's main data/software subscription
- Developed monitoring for market data update in matching criteria
- Delivered customized market statistics reports

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, Git, 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, Git, 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, Git, 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

INTERNSHIPS / RESEARCH ASSISTANTSHIPS / OTHER EXPERTISE

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

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

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