Makoto Sadahiro

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SKILLS

Expertise/experience in: Scientific/Engineering Data Processing and Visualization, Immersive Environment Systems, ETL/Digitalization, Systems/Development Operations (AWS, Kafka, Flume, Hadoop)

Software development in/with: OOP; Python, C/C++, Java, Fortran, shell script, Pig, 68k Assembly, Pascal, BASIC, Tcl/Tk, Lisp; CUDA, mySQL(API), FFmpeg, CAVElib, OpenGL, VRPN, Kivy, STL, Boost, GD, Motif; HTML, VRML

Spoken language: Japanese (native), English (fluent)

EXPERIENCE

Perfect Price August 2015 - August 2019
Software Development Engineer San Francisco CA
Software development for ETL and Data pipeline, system/development operations, and security for "market pricing" machine-learning systems

- Software development for ETL and data pipelining/processing, internal development/system tools (Python, Java, Pig; AWS, Kafka, Flume, Hadoop; mySQL)
- Systems/Development operations and security for AWS-hosted and on-premise systems
- AWS administration
- Compliance (SOC2)

Halliburton | Landmark June 2014 - May 2015
R&D Seismic Data Processing Denver CO
Scientific Software Developer
Software development for geophysical seismic/signal processing software suite (SeisSpace/ProMAX)

- Improvement of existing geophysical data processing software modules (Java, C, Fortran, Shell Script, LISP)
- Secure on-line installation management GUI tool for modules (Java)

Halliburton | Landmark May 2013 – August 2013
R&D Graphics Houston TX
Graphics Software Developer, Summer Intern
Software development for geoscience visualization software suite (Decision Space)

- Development of a prototype gesture-based navigation user-interface for multi-touch display (C/C++, Java)

The University of Texas at Austin, Jackson School of Geosciences September 2012 - May 2014
Institute for Geophysics / EDGER FORUM Austin TX
Graduate Research Assistant
Software development for seismic data processing and performance analysis on GPU

- Development and analysis of GPU optimization methods for wave propagation modeling/simulation (C/C++, Fortran, CUDA)

The University of Texas at Austin, Texas Advanced Computing Center July 2003 – August 2012
Scientific Visualization and Data Analysis Austin TX
Research Engineer/Scientist Associate
Deployment of large-scale multi-pipe immersive graphics systems and OpenGL-accelerated remote visualization systems

- Hardware/software integration of CAVE system; Multiple large scale graphics systems, 360 degree surround-display system, 3-D stereo display, and head tracking system (C/C++, CAVElib, VRPN, Unix tools)
- User-interface hardware and API development to support usabilities in immersive environment; virtual keyboard, wireless connectivity with auxiliary keys/switches, and haptic feedback (C/C++, OpenGL, CAVElib, OOPic)

Software development consulting for collaborative research projects, and internal tools

- Parallel rasterization/composition of large scale spatially/temporally segmented finite element simulation data (C/C++, STL, Boost)
- Development of seismic wave propagation modeling (post-stack 2-D reverse time) code (C/C++, STL, Boost)
- Server-side video processing engine to create meta-data, fast-play clip, scene change detection, etc (C/C++, GD, FFmpeg)
- Data processing and information visualization for children's learning research (C/C++, STL, Boost; VisIt, ParaView)
- Paint program for custom-built multi-touch-screen system (demo at IEEE Supercomputing 2011) (Python, Kivy)

Collaboration and consulting for academic researchers in nationwide for data analysis and visualization projects

- Consultant for TeraGrid/XSEDE in various fields of disciplines; collaborations to produce visualization results for nation-wide researchers'/scientists' research projects
- Development/deployment of low-cost webcasting infrastructure for real-time/archived remote trainings
- Consultant for the on-campus academic units for specification, configuration, and troubleshooting on their 3-D stereo display systems and immersive/visualization systems
- Creating user guide for large-scale production graphics systems and immersive environment
- Coordinating scientific visualization trainings and training contents

Visualization research lab facility management

- Maintaining visualization lab functionality, managing lab proctors for their duties and internal projects, negotiations for facility constructions/maintenances, coordination with system administrators for system maintenance issues, managing facility schedules and performed facility/system demonstrations in events/conferences (IEEE Visualization/Supercomputing)

Hitachi Medical Corporation January 2003 - June 2003
MRI Systems Kashiwa-city Chiba Japan
Software Developer
Various tasks about the imaging software for Hitachi's medical MRI scanner systems

- Specification and development management for a new medical imaging system
- Development of new features and maintenance of imaging/navigation software components (C/C++, Motif, etc)
- Building test environment for DICOM data communication conformance/integrity
- Testing DICOM data communication conformance/integrity with the other medical equipment manufacturers
- Research in imports/exports regulations for technology, such as encryption
- Demonstration of Hitachi MRI products in medical trade shows

The University of Texas at Austin, Oden Institute for Computational Engineering and Science June 1998 - January 2001
The Center for Computational Visualization Austin TX
Research Engineer Intern / Undergraduate Research Assistant
Creation and administration of data repository (C/C++, Tcl/Tk, shell script, VRML)

- Building automated on-demand demo system for the scientific/engineering data repository
- Software development for data processing and validation tools for multidimensional scientific/engineering data
- Designing in-house multipurpose file format specifications
- Documenting user manuals for in-house custom software and 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