Peter Sisk

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Summary

Full-stack, language and platform-agnostic, polyglot engineer with wide experience developing web-based clinical, scientific and business software applications as well as specialty applications hosted on Raspberry Pi and other single-board computers.

Consulting Software Developer - December 2022 to Present
Consultant for nuclear security project. Defined and implemented signal processing pipeline architecture in Python.

GOAT.com - March 2019 to October 2019
Senior Software Engineer - Backend
GOAT is a premium marketplace for buying and selling authentic collectable sneakers. Founded in 2015 to bring trust and safety to sneaker reselling, the platform now offers the largest selection of sneakers ranging from general releases to rare exclusives. Worked on large web application built in Ruby on Rails over PostgreSQL.

Silverside Detectors - March 2017 to January 2019
Senior Software Engineer
One of a team of two software developers at a small startup.

- Built Flask RESTful API running on single-board computers (RPi) to control our proprietary nuclear detection device, communicate with remote Threat Detection Networks and Situational Awareness platforms, perform edge video analytics.
- Used OpenCV and YOLO to perform real-time image analytics
- Developed a Django/PostGIS web app and RESTful API to manage secure communication between our detector nodes and federal, state and private third-party Threat Detection Networks and Situational Awareness Platforms.
- Hosted Django server and db server in LXD containers.
- Experimented with new technologies: e.g. LIDAR, YOLO, tensor flow.
- Research and specify hardware and software.
- General IT support: maintain a secure IT environment, setup and manage firewall, secure file server, automated company-wide backups, provide IT support and guidance as needed.

Gen9 - May 2014 - December 2016
Principal Software Engineer

- Used Python/Flask/SqlAlchemy/React/Bootstrap to develop a web-based Process Execution System to support business, production and scientific lab processes at a commercial-scale gene fabrication foundry.
- Automated R&D and production processes formerly managed by spreadsheets, increasing throughput by multiple orders of magnitude.
- Created reporting tools to track and provide visibility into lab operations.

- Implemented modifications and enhancements to a commercial Laboratory Information Management System (The GenoLogic LIMS) to automate production processes.

The Institute for Health Metrics - May 2013 to May 2014
Senior Software Engineer

IHM provides HIPAA-compliant SAAS solutions to hospitals looking to meet federal reporting standards as well as improve their quality of care.

- Wrote code to extract Stage II Meaningful Use statistics from Protected Health Information (PHI) stored in legacy hospital Electronic Health Record systems.
- Meaningful Use stats are securely maintained "in the cloud" and presented to subscriber hospitals via a web service API and a Grails web application.
- Project is implemented as an extended Domain Specific Language (DSL) written in Groovy and backed by Mongo.
- Optimized code and queries to scale the application to support large user bases.

The Broad Institute, MIT & Harvard - July 2007 to May 2013
Principal Software Engineer, Annotation Informatics

Lead developer on multiple projects, manage small teams of developers and web designers:

- Led small team of developers on a web-based tuberculosis genomics database hosted jointly at MIT and Stanford universities.
- Wrote tools to facilitate research into the genomics of M. tuberculosis. Project is implemented in Java using the Tapestry web framework and Hibernate on Oracle. Asynchronous Javascript (AJAX) is used extensively.
- Designed and implemented tools to process and display tuberculosis Single Nucleotide Polymorphisms found via "next generation" sequencing and correlate mutations with observed drug resistance.
- Wrote, maintained and debugged Python scripts to perform bioinformatic analysis.
- Designed and implemented natural language processing tools to extract relevant citations from the literature to annotate selected genes.
- Designed and implemented user interfaces to facilitate curation of annotation on genes.
- Designed and implemented tools for analysis and comparative display of next-generation sequencing data showing SNP variation across strains of the tuberculosis bacterium.

RentGrow, Inc. Waltham, MA - June 2006 to June 2007
Principal Software Engineer

- Responsible for reengineering a legacy Tenant Screening Service application using modern technology and tools.
- Derive requirements from functional review of existing service, review of existing code base as well as consideration of industry standards.
- Create architectural and detailed design including database schema design. Implement newly designed service using Java web technologies integrating best-of-breed open source and proprietary components
- Redesigned application using Java/J2EE, ILog rules engine, Hibernate and Postgres DB
- Restful API facilitated easy integration by third-party applications.

Amicas, Inc. Brighton, MA - August 1999 to June 2006
Senior Software Engineer
Founding engineer at a startup that developed all aspects of a web-based medical image management system (PACS). Went from start-up to profitable, publicly traded company. Major projects included design, implementation and documentation of:

- Image Importer component of Amicas Server – windows service listens for incoming DICOM messages, extracts, compresses and saves image metadata in DB2 database, compresses and stores image files in local file system or SAN, serves image files and metadata over HTTP as XML on client request.
- Task Scheduler component of Amicas Server – multithreaded windows service performs scheduled maintenance tasks as well as launches image management tasks in response to DICOM and HTTP requests.

Was principal engineer for many special projects, including CD Burner Applet, Viewer Installer Applet, Windows Service Launcher, Integrated Image Viewer (in use at Partners Healthcare), ported special versions of our product to other platforms.
All projects implemented mostly in Java. JNI-wrapped C++ used for computationally intensive and OS-level functionality. Extensive use of Servlets, applets and JSP's for communications between server and client. Lead teams of two and three other developers.

W3Health, Inc. Boston, MA - February 1998 to August 1999
Senior Software Engineer
Wrote software to extract medical information from legacy MUMPS-based systems and aggregate for presentation in ASP-based Virtual Electronic Medical Record. Developed COM/ActiveX components for communicating between MUMPS legacy system, Java-based backend and ASP front end. Backend data stored in SQL Server accessed through JDBC on server side and ODBC on ASPs.

MEDITECH, Inc. Cambridge MA - 1983 to 1998
Senior Software Engineer
Designed and implemented clinical software applications still in use at over 2,000 hospitals and health care organizations world-wide. Lead engineer for Nursing, Radiology, Pharmacy and Physician Care Inquiry modules. All work done in MEDITECH's proprietary language and operating system.

Education

MS Civil Engineering - U of Connecticut, Storrs, CT
BA Physics - Reed College, Portland, OR
Certificate in C/C++ - BU Metropolitan College
Additional courses in CS and Biology taken at Harvard Evening Extension & MIT
Functional Programming in Scala - Coursera
Bioinformatics: Life Sciences On Your Computer - Coursera

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