JEFFREY PECK
FULL STACK DEVELOPER

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SUMMARY / OBJECTIVE

Highly Motivated Full Stack Software Engineer with a broad experience in web application development, infrastructure, security, backend APIs, and frontends

QUALIFICATIONS

- Proficient in a variety of languages and tools, and always interested in learning new things
- Driven by a desire to create, innovate, and improve
- Passionate about writing high quality code that can be well understood by my teammates
- Determination to achieve goals and continuously improve
- Multi-tasked and flexible, with the ability to work within strict deadlines
- Strong sense of teamwork

EDUCATION

Computer Science & Engineering, Master of Science
University of Connecticut, Storrs, Connecticut   August 2005 – May 2007
Studies focused in Cryptography, Computer Security, Networks, and Algorithms.

Computer Science & Engineering, Bachelor of Science
University of Connecticut, Storrs, Connecticut   August 1999 – May 2004

EXPERIENCE

Senior Software Engineer   July 2017 – present
ReadCoor, Inc., Cambridge, Massachusetts

- Worked on innovative solutions for presenting microscopy and base calling data to enable fast and user-friendly scientific discovery in next-generation spatial sequencing
- Full stack developer, having significantly contributed to solutions for infrastructure, data storage, image processing, backend APIs, frontend UIs, security, and various R&D projects throughout my time at ReadCoor, Inc.
- Designed and engineered the customer facing database and backend API, and managed and updated it for several years, using Django Rest Framework and PostgreSQL. This included integration with OpenAPI to create standardized views.
- Wrote the Results Explorer front-end and back-end image server, capable of displaying a terabyte or more of scanned image data, overlaid with a million or more base calling results, in a web browser. Leveraged open source libraries such as OpenSeadragon and PIXI.js. The front-end UI is written with React, and the backend, written in Python, uses the Tornado web server.
- Wrote and maintained client-facing API proxy that handles user authorization
- Contributed to the UI that runs on the instrument, building components, and writing the interactions with the client-facing API proxy
- Contributed to the processing pipeline, writing functionality to create image pyramids, and using of Zarrs for storage to enable support of dynamic re-leveling of 16 bit image volumes for customer facing views
- Implemented secure user access to the backend from the web UI as well as the instrument, using Auth0. Wrote provisioning steps to setup an instrument for a new customer, taking into account OAuth best practices.
- Helped with onboarding new team members and to build the UI team

Skills

General Skills:
Web Applications, Restful APIs, SQL, Security, Enterprise Search, Cloud Infrastructure, Full Stack Development

Tools and Services:
Amazon Web Services (AWS), Auth0, Docker, Vagrant, jq, PostgresSQL, MySQL, Redis, ElasticSearch, RabbitMQ, MongoDB, Riak, FAST ESP, Apache SOLR, nginx, ZooKeeper, gitlab-ci

Frontend Libraries:
React, Redux, Jest, Enzyme, Styled Components, Storybook, VueJS, Nuxt, Angular, Express, Backbone JS, jQuery, Prototype, Bootstrap, d3, OpenSeadragon, PIXI.js, plotly, Game Closure, Phaser 3, RxJS, WebGL, Leap Motion API, Express Validator, Lodash, Sequelize, Mustache

Backend Libraries:
Django Rest Framework, Flask, Tornado, Bottle, asyncio, JSON Schema, NumPy, Pandas, pillow, Numba, Dask, Zarr, Fire, Fabric, Conda, pip, Celery, JWT

Languages:
Python, Javascript, Typescript, Java, bash, PHP, Perl, Ruby, Objective C, C, Rust

EXPERIENCE (CONT.)

Integration Services Engineer
Intellify Learning, Boston, Massachusetts

May 2016 – July 2017

Duties:
• Technical leadership, design/architecture, and implementation for Intellify customer integrations of the Intellify LIaaS (Learning Intelligence as a Service) enabled solutions.
• Direct line of communication with the company's largest clients, personally solving issues that arise or triaging them appropriately
• Working with the QA team to ensure client deliverables are complete
• On the backend, work on the Intellify service written with the Java Spring Framework using ElasticSearch, MongoDb, ZooKeeper, among other tools and services
• Work with AngularJS to support and develop the Intellify front-end tools
• Use Continuous Integration and Task Management tools such as Concourse, Rundeck, and Singularity to deploy and manage code releases that are maintained on Github
• Work on a team that employs the Agile Methodology

Accomplishments:
• Intellistream Dependency Chart Generator – wrote a tool in Python that uses GraphViz to recursively generate a dependency tree that depicts the sources of data for a particular processing pipeline stage, from data stored in MongoDb
• Wrote multiple ElasticSearch Scripted Metric aggregations in Groovy to deliver data that cannot otherwise be precomputed. Developed a tool to manage and deploy these scripts
• Came up with and developed an innovative approach to express ElasticSearch results as CSV content at runtime, through the use of JSONPaths, in Java
• Implemented an approach to do live joins/merges of results from multiple ElasticSearch queries
• Implemented a way of dynamically applying a mapping function to ElasticSearch results
• Wrote the Download Service – a tool that queues large requests (i.e. for csv content) and provides a link to where the result can be downloaded from AWS S3, upon completion of the request
• Intellify Docker Services – Wrote a docker-compose.yml file that contains all of the services needed to run the intellify-service locally, without having to install the tools directly
• Improvements and fixes to the Intellify-service code base

Senior Software Engineer
Esperdyne LLC (formerly TNR Global), Hadley, Massachusetts

May 2010 – April 2016

Duties:
• Develop applications to efficiently process and deploy data to a search index of over 40 million documents for a well-known industrial search client
• Develop tools for parsing and storing metadata (in Redis) to be accessible for document processing
• Design and manage a front-end application that faces millions of users of the client's search website
• Build demos of our tools using ElasticSearch behind of HTML5 boilerplate libraries
• Take a leading role on new development and projects, from the initial planning to their successful completion
• Primarily develop using Python, Java, and PHP on Linux systems
• Work with tools and libraries including Riak, Redis, Flask, Celery, RabbitMQ, Apache Solr, ElasticSearch, and FAST ESP
• Peer-program with other developers occasionally (using GNU Screen)
• Handle some systems tasks involving the management of Amazon Web Services (AWS) EC2 instances and installing services on specific nodes
• Manage configuration of search cluster to be ready to roll out a new deployment of the search application at any time
• Effectively communicate with the client, making sure that their needs are being met
• Periodically lead meetings with the client

Accomplishments:
• Innovated and implemented a content build cycle that uses a messaging queue to pass data to different sub-systems efficiently. It was used to process five million of the client's most important documents every week. It uses Celery, RabbitMQ, Redis, and Fabric
• Wrote a PHP front-end service for conducting searches, utilizing REST APIs of the various back-end services
• Refactored portions of existing scripts used in processing to remove extraneous dependencies. Additionally, code is more elegant, more efficient, and easier to modify
• Set up secondary index of document data in Riak. This has made handling large delete requests and auditing the live index much more straight-forward
• Made modifications to MySQL schema to improve the performance of queries made regularly to the front-end
• DocFeeder: Wrote an application in Java that makes it possible to feed documents to FAST ESP in batches in the JSON format, improving the overall content feeding cycle
• Query Template Editor: Wrote a web interface where query templates can be created, edited, and even tested with sample data all from the browser in a clean environment. Features include a source-code editor with syntax highlighting, and versioning
• Resolved numerous issues and concerns of our client
• Became Apache Solr Certified

Web Developer / Systems Analyst   July 2007 – April 2010
Big Y Foods, Inc., Springfield, Massachusetts

Duties:
• Maintain the company's website using PHP, MySQL, XHTML, JavaScript, Prototype, jQuery, AJAX, Adobe Flex, and more
• Build software for Marketing department
• Contribute at meetings regarding design for a flyer that reaches 100,000 customers
• Work in "organized chaos" on a creative team of Marketing experts

Accomplishments:
• Built interactive administrative interfaces using Adobe Flex, Cocoa (Objective C) and PHP/XHTML
• Designed Content Management System for the company's large and evolving website under strict specifications
• Built interactive drag-and-drop coupon systems, including a back-end coupon design system
• Built a user-friendly login system that includes options for Facebook Connect and uses Facebook's Web Service API and Cross-Domain Cookies
• Assisted company in making decisions regarding web hosting and other services offered to them by third-parties

FREELANCE AND OTHER PROJECTS

OpenCheck LLC
opencheck.net

• Developed a system for governments and non-profit organizations to display financial data to constituents in the form of an "open checkbook"
• Full stack development: Deployed instance on Digital Ocean and set up environment with the necessary tools. Developed Python back-end with Flask and WSGI interface to Apache web server. Uses JQuery and BackboneJS on HTML5 front-end
• Implemented live updates of charts and graphs of financial data based on filters that can be modified through UI components on the front-end
• In addition to developing product, also developed the website
• Participated in Valley Venture Mentors program
• Represented OpenCheck at trade shows
• Co-founded this company and have made key decisions in the implementation of the OpenCheck service
• Currently in use by several municipalities throughout Massachusetts

FREELANCE AND OTHER PROJECTS (CONT.)

Undisclosed

• Part-time freelance work at this company that provides innovative tools to detect radiation for Department of Defense and Department of Homeland Security (not disclose company name for security purposes, but can furnish for references)
• Set up RabbitMQ infrastructure and updated code to broadcast status updates from devices to a central database, mostly in C, and using vagrant provisioning to test
• Wrote an API in Express.js to fetch readings, involving lots of SQL query optimizations, and implementation of long-polling to achieve a live near-realtime results feed
• As part of a side-project within this company, put together a web frontend that demonstrates how certain materials combust/decay and displays graphs of the combustion by-products. This was written in Vue.js, Nuxt.js (server-side rendering) and plot.ly for the charts.

Homework Helpline
bigy.com/homework

• Built an interactive "chat" system for students in New England to seek homework assistance from teachers
• Used PHP, MySQL, Javascript, Prototype, AJAX, XHTML, and CSS
• Made an administrative section to monitor user sessions, gain detailed statistics and charts of teacher availability vs. number of students, and manage vacation days, as well as teachers' login accounts
• Set up script to run weekly reports

Fresh Acres Market
freshacresmarket.com

• Built a website for a specialty foods market in Springfield, MA using PHP, Smarty templates, sIFR for rendering fonts
• Designed an administrative section of the website that includes a drag-and-drop Javascript interface for editing the "Big Board" - a graphical display of the weekly specials – generated with the GD Library
• Came up with a calendar/newsletter viewer that uses CSS background properties, Javascript, and Prototype to smoothly magnify a rolled-over image, without the use of Flash
• Built Role Based Access Control (RBAC) for administrative accounts
• Set up advanced logging of administrative user activities
• Designed site navigation to read from and parse an XML file