

Phillip A. Kahrl  
Software Engineer  
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## Summary

Highly-experienced software engineer, developer and architect. I enjoy working on high-value projects that directly impact a business and provide significant revenue or cost savings.

## Areas of Expertise

**Front-End and Full Stack Development** JavaScript, Python, TypeScript, React, Node.js, Rust and WASM, Spring, Spring Boot, Express, Django, flask-smorest, Ruby on Rails, Leptos  
**Web Services and APIs** using Python, Scala, Java, SpringBoot, Node.js, Ruby, Rust  
**Data Pipelines** AWS EMR and Redshift, Apache Hadoop, Spark, SQL and related technologies  
**Data Analytics, Dashboards and Visualization** Redash, D3.js  
**Cloud Architecture and System Design** using **AWS** (S3, DynamoDb, EC2, RDS, Lambda, RedShift, EMR, ElasticSearch, Kinesis/Firehose) **GCP**, and **Azure**

## Recent Experience

### November 2021 - July 2023

#### Principal Engineer at Machinify

Developed applications that integrate human expertise and AI to automate medical claims processing at scale, save money and allow medical providers to focus on patient care. Scala, Apache Spark, Postgres, JavaScript, React, Python. Developed pilot application into production for recurring revenue.

### February 2021 - November 2021

#### Staff Software Engineer at Byte Technology

Designed and built micro-services and front-ends using TypeScript, Node.js, React and Next.js to create customer-facing applications that manage fully automated stores selling perishable products. Provided utilities for metrics, reporting and business intelligence and analytics on inventory, store performance and financials. Built and integrated microservices for payments to support all manner of payment devices for smart vending machines in order to facilitate 30 - 80% annual sales growth.

### August 2018 - January 2021

#### Lead Engineer at Viewpath

Reporting directly to the CEO, responsibilities included building a new engineering team and SaaS product for Project Management space as well as maintaining and enhancing existing SaaS products. In addition to being a technical IC, responsibilities included recruiting, hiring, managing and mentoring engineers, product development, technical writing and communications with the investment board. Technologies used included legacy platforms on .NET and Java runtimes and new software built on top of a React/Node.js toolchain on the Google Cloud Platform.

## **May 2018 - August 2018**

### **Founder and Principal Engineer at Cathexis LLC**

Built Weblum, a privacy-oriented application for sharing photos and content. Built an online store and infrastructure to provision individually hosted applications on demand. All applications and infrastructure are built on top of AWS serverless infrastructure (AWS Lambda, API Gateway and S3) in order to deliver scalable, maintainable applications at low cost. Principal in all areas of launching a new product and company from product development and infrastructure design to legal and marketing.

## **August 2016 – May 2018**

### **Senior Software Engineer, Segment Modeling Team, Quantcast.**

Developed web applications for audience insights which let advertisers and publishers understand their customers, gain insights and make data-driven decisions for advertising. Technologies used include ReactJS, Node, Angular, CSS3 and HTML5. Developed patterns and frameworks for re-using features across applications. Contributed to system architecture and implementation for exposing large data sets through a REST API. Design and assessment of big data technologies including AWS EMR, Apache Spark and AWS RedShift. Involved in all aspects of recruiting and mentoring in building out a new team. Built APIs in Java/Scala.

## **October 2008 – August 2016**

### **Software Development Engineer at Amazon**

- **Amazon Fulfillment Item Data Quality** Re-engineered legacy systems to use modern web technologies, languages and cloud-based big data infrastructure. Migrated 100+ on-premise Oracle databases to a unified cloud-based platform on AWS. Applied statistical methods and machine learning models to identify defects in orders and item measurements. Mentored peer teams in the use of big data tools including AWS Kinesis and RedShift. Generated \$30MM/annually in cost savings on fulfillment expenses.
- **Kindle Advertising** Designed and built a system to perform predictions of ad impressions on Kindle devices using large data sets and statistical prediction methods, to enable CPM sales of \$4MM/month. Primary inventor on [US Patent 10,789,619](#).
- **Display Advertising** Built out front-end and back-end systems for ad serving which work at high volume with extremely low latency. I was the sole developer responsible for designing and building an ad feedback system that is instrumental in maintaining a good customer experience while satisfying the needs of advertising customers. Display ad revenue grew from \$5MM/year to 25% of gross profit for Amazon's business.

## **Other Experience**

**1997 – 2008**

### **Server Application Consultant**

Developed server applications for numerous clients across the nation. My clients included Fortune 500 companies such as Chevron, PriceWaterhouseCoopers, Amazon.com, Walt Disney, US DoD and financial institutions. My work generally involved developing client server and web applications used for business processes and knowledge management. I was often

the sole developer responsible for start to end delivery of projects from requirements definition all the way through to production release and maintenance.

## **1993 – 1997**

### **Surface Warfare Officer, United States Navy**

Deployed on USS Rentz (FFG-46), Naval Achievement Medal.

## **Public Portfolio**

**Inventions:** [US Patent 10,789,619](#) Advertisement metric prediction.

**Weblum:** <https://weblum.photos> - Online store and progressive web application for privacy-oriented photo sharing and social networking. Built using React, Node.js and AWS serverless technologies.

**Medium:** <https://medium.com/@voiceofreason3141>, writing on software development

**GitHub,** <https://github.com/phil-kahl>, open source projects and code examples.

**Tom Swifty:** [https://www.amazon.com/phil\\_kahl-Tom-Swifty/dp/B07BR14GVL](https://www.amazon.com/phil_kahl-Tom-Swifty/dp/B07BR14GVL). A voice skill built on the Alexa Skills Kit.

## **Education**

### **University of California, Davis**

**Master's of Science, Mechanical Engineering**, specializing in Robotics and Control Systems.  
3.70/4.0 GPA, published thesis: <https://hdl.handle.net/2027/uc1.x48387>

### **Rensselaer Polytechnic Institute,**

### **Bachelor's of Science, Mechanical Engineering**

3.75/4.0 GPA, Summa Cum Laude

## **Professional Certification**

Sun Certified Java Programmer for the Java 2 Platform

Principal Certified Lotus Professional (PCLP) for Domino Application Development

## **Open Source Contributions**

Primary Architect and Programmer for RealWorkFlow- a workflow engine written in Java for the IBM Lotus Domino server available on <http://www.openntf.org/>

Primary Architect and Programmer for Notes Music Station - an MP3 library and tag editor for your IBM Notes mail client available on <http://www.openntf.org/>