Robert Metcalf

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Architect, Leader, Manager, and Software Engineer

Seeking

Seeking opportunities as a director, manager, or individual contributor.

Overview

Customer-focused with a balance of leadership skills, hands-on technical work, and a bias for action.

Background includes management, leadership, bringing products to market that impact the bottom line, enterprise architecture, and cloud-scale software development.

Professional experience

Innova Solutions   Jul 2015 – Present

Senior Practice Manager   **Jan 2022 – Present**

Challenge	Build and grow a consulting practice and manage 65+ software engineers.
Activity	Overhaul hiring, career development, and communications. Wrote hundreds of pages of organizational and operational documents. Added 32 new hires in a 6-month period.

Project – Mayo Clinic

Project	Mayo Clinic is a critical client, and I stepped in when the prior manager left. Manage 60+ software developers across 8 projects.
Activity	Interface between Mayo Clinic and Innova regarding every aspect of the business – personnel, projects, architecture, deliverables, financials, planning, etc.

Project – AARP

Project	Manage an identity management (IdM) project, which migrated 200+ vendors from on-premises to Azure SSO (single sign on). Transition 3,000 users from on-premises to Azure MFA (multi-factor authentication).
Activity	I assumed the role to maintain client continuity after the project manager left. Lead many on-premises migration and modernization projects.

Project – Government Client

Project	Government Client shared a data center with another agency. Our client needed to migrate their on-premises workloads to AWS as soon as possible.
Activity	The client had an immediate need, and our consultants were 100% allocated to other clients. I led a 6-month AWS migration effort.

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IBM Cloud, consultant via Innova   Jul 2015 – Dec 2021

New Operating System project – 10 months   Mar 2021 to Dec 2021

Architect, Principal Developer, Team Lead (10 people)   *Go, Python*

Project	Deploy a new operating system, in 50+ global data centers, to support secure environments and new hardware / software features.
Activity	As the architect and team lead (10 people), I created the architecture and integrated a new operating system into the global deployment pipeline. The code base is larger than most enterprise.

Encryption project – 11 months   Apr 2020 to Feb 2021

Principal Developer, SRE (site reliability engineer)   *Go, Kubernetes, Python*

Project	IBM Key Protect (KP) allows customer data to be secured and stored in the cloud using data encryption techniques. The role requires security knowledge, code reviews, operational expertise, and stakeholder compliance. One mistake can result in crypto shredding – customer data can never be recovered.
Activity	Develop Key Protect security features. 50% of my time was spent on code reviews looking for obscure errors and edge cases. Automate platform operations to ensure errors are not introduced and thousands of components perform as expected.

Cloud Modernization project – 2 years   Apr 2018 to Mar 2020

Principal Developer, Team Lead (12 people)   *Go, Kubernetes, PHP, Python, React, Oracle*

Project	Long-term project to migrate legacy functionality to micro services. Transition from IaaS (Infrastructure as a Service) to a VPC (Virtual Private Cloud) architecture.
Activity	Implement large chunks of monolithic back-end functionality as micro services in Go, deployed via Kubernetes. Developed API and CLI interfaces. Rewrote a large section of the file and block storage stack. Refactor financial system to accommodate new product offerings (migrate databases with 10 billion+ records).

Spot Instances project – 11 months   May 2017 to Mar 2018

Architect, Team Lead (8 people)   *Go, Python*

Project	Spot Instances use spare capacity and are available for less than On-Demand prices.
Activity	As an Architect, Spot Instances went from an idea to production in 11 months. As a Team Lead (8 people), I shepherded the project from concept to product delivery and customer use.

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Object Storage project – 1 year, 10 months   Jul 2015 to Apr 2017

Architect, Principal Developer   *PHP, Python*

Project	Deploy 100 PB of Object Storage, like Amazon S3, in every global data center (50+) in an automated and repeatable way.
Activity	Keep the existing Object Storage platform stable. Seamlessly migrate customer data from the old to the new Object Storage platform. Architect and implement systems to discover and analyze anomalies across 50+ global data centers (exabyte scale).

Quantum   Oct 2010 – Jun 2015

Engineering Manager (13 people) – 4 years, 9 months

Project	I conceived and created StorNext Connect, which is an enterprise product to manage large StorNext environments. The project went from a working prototype to product approval, by Quantum's board of directors, in 90 days.
Activity	Built a team of 13 and worked with cross-functional teams (project management and product marketing) to bring the product to market. This was the first new software offering from Quantum in over 10 years.

3M   Nov 2009 – Sep 2010

Senior Developer and Team Lead // consulting role – 11 months

Project	3M needed greater insight into their global supply chains and logistics. Not for the movement of goods, but for resource planning and factory utilization.
Activity	As a Senior Developer, the team built a consumer-friendly web site, replacing a mainframe interface exposed via the web. The development team took 3rd place in 3M's yearly innovation awards. The award competes with new products, patents, manufacturing innovations, and business process optimizations across all of 3M.

Flyspy.com, post-funding   Jun 2008 – Oct 2009

Founder and Developer – 1 year, 5 months

Project	From a TechCrunch article: "At the Mashup Camp pre-conference dinner tonight, there were a number of demos, all of which were interesting. **A non-public service that stood out was Flyspy, a search engine for airline tickets that will change the way we all travel.**"
Activity	Raise Venture Capital (VC) funding to start the business, hire the team, and negotiate with airlines and data suppliers. Close contractual deals with all major airlines. Obtain agreements to sell tickets. Build and launch a web site that processes 200 million airfares per day and manage a rapidly expanding startup.

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Verifications Inc.   Jun 2007 – May 2008

Architect and Senior Developer // consulting role – 1 year

Project   Verifications Inc. is a background screening and onboard processor with more than 50% of the Fortune 100 as clients. The time required to process a background check increased every year. And the expectation to deliver results to the customer decreased every year. Resulting in a time compression.

Activity   Architect the system with smaller discrete components, versus a monolith. Implement parallel processing to decrease overall processing time. Rebuild the front-end to accommodate bulk processing of background checks. These improvements streamlined processing and reduced turnaround time by a full day.

SFM   Jul 2005 – May 2007

Architect and Senior Developer // consulting role – 1 years, 11 months

Project   SFM is an insurance underwriter specializing in workers' compensation insurance. SFM needed an extranet for customer and partner access to internal systems.

Activity   The client relied on my previous experience to guide them through the process – from concept to information architecture to development, implementation, and support. Designed and built the extranet and the intranet (front-end, back-end, infrastructure, security, and training programs).

Flyspy.com, pre-funding   Jan 2003 – Jun 2005

Founder and Developer – 2 years, 6 months

Project   Spent 2 1/2 years building inroads and relationships with the three largest airfare providers to obtain data (struck out). Worked with ITA Software to create a framework (software, pricing, legal, and distribution) that returns millions of airfares so customers can easily understand the market for airfares.

Activity   I created the business. Including developing the idea, proof of concept, partnerships, and business plan for what would eventually become Flyspy.com. Built industry awareness that the current system, consisting of the three major airfare data providers, wasn't enough to satisfy emerging consumer needs.

I wrote the first version of Flyspy, which computes massive amounts of airfare data and distils airfare information into gorgeous charts.

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Competencies

Cloud

Platforms	AWS, Azure, IBM
AWS	EC2, ELB, EBS, VPC, RDS, IAM, S3, SQS, EBS, and Amazon direct connect

Development

APIs:	Amazon AWS and MWS, IBM Cloud, Facebook, Google, Twitter
Containers:	Docker, Kubernetes, and most virtualization technologies
Databases:	MySQL, PostgreSQL, Microsoft SQL Server, Mongo, Oracle
DevOps:	Ansible, Chef, AWS Boto3 (Python), GitHub, GitHub Actions
Front-end:	React, JavaScript, HTML 5, CSS frameworks
Languages:	Python, Go, C, Shell
Platforms:	Linux, Mac, Windows

Education and teaching

Teaching

- Taught MBA classes (guest lecturer) at Pepperdine University. My startup, Flyspy.com was the case study (see Jun 2008 – Oct 2009 and Jan 2003 – Jun 2005).
- Taught MBA classes (guest lecturer) at the University of Minnesota and Pepperdine University (Los Angeles, CA). My startup, Flyspy.com, was the case study.

Graduate level

- University of Minnesota (Minneapolis, MN), graduate-level studies (not seeking a graduate degree) in artificial intelligence, databases, and operating systems.

Undergraduate level

- Carleton College (Northfield, MN), geology major. Left early when I was offered a job with a major newspaper as a software developer.
- Mankato State (Mankato, MN), computer science major, AA degree. I put myself through college by writing software and selling it to small-and medium-size businesses.