

# Praki Prakash

✉: praki.prakash@gmail.com

📍 San Carlos, CA 94070

☎ 650-200-5155

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## CHIEF TECHNOLOGY OFFICER

System Architecture • Technology Direction • Software Development

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Entrepreneurial technologist, with more than two decades of experience in designing and building innovative products. With a passion for building simple and robust software to meet the needs of the users, combines a broad range of experience with a can-do attitude. Identifies technology options and makes engineering trade-offs that allow meeting immediate needs with a well-defined direction for evolution.

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## PROFESSIONAL EXPERIENCE

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Chief Architect, Picarro Inc, Santa Clara, CA

Jan 2015 - Present

As the Chief Architect of a pioneering technology company that is redefining the natural gas distribution industry, I steer the architecture of all software developed in the company and provide technology vision and direction needed to transform the company with a scientific instrumentation background to a data analytics company.

- Designed and implemented a ReactNative Android app for gas leak detection using a portable analyzer. Uses heatmap overlaid on Google maps to aid user in finding and recording leak locations quickly.
- Realigned the architecture of Picarro's flagship product Surveyor from a monolithic mess to a horizontally scalable micro-service architecture leading to shorter development and test cycles, improved customer satisfaction.
- Introduced the team to cluster computing technology, Apache Spark and scalable databases, Crate.IO, enabling key R&D efforts.
- Defined a three-year technology roadmap culminating in a modern and efficient datacenter cluster managed by Apache Mesos.
- Defined and led Enterprise Readiness initiatives. Addressed security concerns about sensitive customer data with a cloud-based analytics workshop which is securely managed and fully audited. Guided performance and scalability improvements.
- Defined and building a Windows to Linux strategy for Picarro analyzers to enable better deployment (Docker), simplified communication (HTTP2, Message bus) and ReactJS-based UI.
- Assisted various teams in the company with their technology selection process, mentored new employees in software development process. Grew awareness of software engineering best practices in hardware and system-centric teams.
- Revamped PKI infrastructure with certificates provisioned from LetsEncrypt.org. Every Picarro analyzer in the field is provisioned individual X509 certificates enabling cryptographically secure communication.

Some hands-on contributions:

- A Simple and scalable data lake built using Crate.IO for data analytics which enabled a time-critical analysis to be done on a scale considered undoable.
- Survey Drive Simulator, a highly flexible and scalable tool which provides the capability to simulate any condition needed to test Surveyor and eliminates lengthy and expensive driving tests.
- Surveyor Dashboard, a business metrics dashboard built using ReactJS and deployed using Docker.

Skills: Apache Spark, Crate, Docker, ReactJS, React Native, React Redux, React Saga, D3, GDAL, Java, Python, JavaScript, Groovy.

Performance and Scalability lead for HP/Arcsight's flagship product Enterprise Security Manager. Defined the performance metrics for a comprehensive performance and scalability study of ESM, identified bottlenecks. Designed a distributed query processor to scale beyond the current single-threaded approach.

Presented ESM performance study results at Protect 2014 conference.

Skills: Scalability, query parallelization, performance measurement and analysis, groovy, R, Java

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**Founder, GuidingWave Technology, San Carlos, CA****Jan 2010 - Dec 2013**

Conceived, designed and developed a Data Center Management tool for use with VMware vSphere, with the innovative idea of using Machine Learning to understand datacenters and provide expert guidance in their management. A data gathering agent monitors all changes to the data center, collects performance data and events. This data is stored in a purpose-built database and a data analysis module utilizing machine learning algorithms to learn the capacity and utilization patterns.

The user interface component provides widgets to visualize the data from the Graph database and build custom dashboards in a browser-based designer.

Skills: Clojure, vSphere, ESX/ESXi, Sketch-based data structures, Wavelets

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**Staff Engineer, VMware Inc, Palo Alto, CA****July 2005 - Dec 2010**

Lead Architect for VMware's Capacity Planner team.

- Architect for VMware Capacity Planner team overseeing several versions of capacity planning products at VMware.
- Provided technical guidance to a team of more than thirty engineers involved in building and maintaining VMware Capacity Planner product and service.
- Designed and implemented a Virtual Machine to Host mapping algorithm.
- Redesigned VMware Capacity Planner service to scale to large numbers of concurrent users, receive and process in excess of one terabyte of inventory and performance data from capacity planning assessments at customer sites. The redesign virtually eliminated failures under load and reduced processing lag times from days to hours.
- Prototyped an operations dashboard for VMware Capacity Planner service to measure and monitor critical aspects of the service.

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**Engineering Manager, Yahoo! Personals, Sunnyvale, CA****Nov 2004 - July 2005**

Managed one of Yahoo!'s most profitable properties, Yahoo! Personals search engine team of ten engineers.

- Managed Yahoo! Personals search team with both developmental and operational responsibilities for the popular Yahoo! service.
- Successfully implemented a Business Continuity Planning solution for Yahoo! Personals profile database eliminating single point of failure and significantly improving the failure and disaster recovery aspects of the service.
- Delivered new features and improvements to profile matching periodically.

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**Founding Engineer, Westbridge Technologies, Inc., Mountain View, CA****Oct 2001 - Nov 2004**

As the first employee of a XML technology startup, set the architecture and technology direction for the company's innovative XML messaging product.

- Joined Westbridge Technologies as its first employee and played a guiding role in the design and implementation of XML Message Server product.
- Mentored the local and offshore engineering teams.
- Designed and implemented a metadata-based server core which proved to be highly flexible and reusable and resulted in significant productivity boosts.
- Designed and implemented XML Signature and Encryption modules.

- Provided quick prototypes of features and functionality leading to many customer acquisitions.
- Joined as a Director of Engineering and soon entrusted with responsibilities for all development teams of more than sixty engineers.
- Hired and mentored technical leaders and engineers.
- Introduced Java and Servlets to the company.
- Delivered a new web-based service meeting strict deadlines.

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## EDUCATION

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**Indian Institute of Technology**, Chennai, India

**Master of Technology**

**University Visvesvaraya College of Engineering**, Bengaluru, India

**Bachelor of Engineering**