

SHAKILA POTHINI

VP of Engineering, SOFTWARE

Elevating the art of healing with connected intelligence



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ABOUT ME

Digital innovation leader with 25+ years driving connected intelligence in life sciences and diagnostics to transform labs, empower patients, and advance health

SKILL HIGHLIGHTS

- **AI Change agent** pioneering transformative AI solutions through strategy, readiness, governance, and adoption frameworks—delivering impact from NPI to lifecycle support via *synthetic image generation, deep learning segmentation (200,000 droplets), RAG-based chatbots, predictive CLV analytics, clinical design automation*, etc.
- **Leader in Engineering Excellence** with global team (150+) developers, COE - data scientists, bioinformaticians, architects, technical product owners etc. to design and deliver complex, *connected informatics platforms (20+) and diagnostic systems (15+) generating up to \$1.5B in revenue*.
- **Customer focused technology specialist** finding the right application of technology trends like IoT, Cloud, AI/ML, Voice, Biometrics.etc. for scientific acceleration. ( IoT instruments, Alexa, FaceID, RFID smart workflows etc.)
- **Innovation Catalyst**– Driving adoption of emerging technologies such as *GenAI, Google Glass, augmented reality, and voice-enabled smart lab workflows* to enable new product capabilities, enhance service delivery, and improve supply chain efficiency etc.—while fostering a fail-fast culture via hackathons, , pyDays, etc.
- **Cross Functional Influencer**– Unified marketing, engineering, manufacturing, and service to deliver integrated workflows, aligning the technology roadmap with business goals. Examples include modernizing manufacturing tools with cloud solutions, using AI to classify service failures, improving sales forecasting accuracy, enabling demand planning to reduce scrap. etc.
- **Process Optimizer** driving development of platforms & solutions with Agile software process in unison with Product Development Life Cycle & Commercialization Process, key principles of lean thinking like Daily management, A3 problem solving, and metrics to enhance product definition, execution, and quality
- **Culture Architect** shifting from siloed thinking to system thinking, from fearful compliance to empowered engagement, and from defensive criticism to constructive feedback—creating a culture of innovation.

OPERATING TENETS

- 👤 **PEOPLE** : if you want to build a ship, don't assign tasks, just teach your people to long for the sea.
- ⚙️ **PROCESS** : process is a guideline that should drive agility & continuous improvement .
- 📦 **PRODUCT** : Don't think products, think workflows & experiences that can transform patient health

WORK EXPERIENCE

- **VICE PRESIDENT OF ENGINEERING, SOFTWARE** Bio-Rad Labs, Dec 2021 - Present

**Leading Data Science and AI Transformation**– As VP of Software Engineering at Bio-Rad, influenced a 150+ member global organization by **applying structured AI strategy, readiness, governance, and adoption frameworks**. This approach embedded AI into the DNA of development—from NPI feasibility through lifecycle support—delivering measurable impact in innovation, efficiency, customer experience, and business value.

- **Accelerated NPI Feasibility**– Reduced blood-typing model feasibility from 8 months to 3 months using synthetic image generation (Stable Diffusion, Hugging Face, PyTorch).
- **Deep Learning at Scale**– Deployed U-Net with TensorFlow and AWS SageMaker to segment 200,000+ droplets, improving accuracy and enabling continuous retraining.
- **RAG-Powered Customer Support**– Built cybersecurity and immunohematology chatbots (AWS Titan, pgvector, Claude Haiku) that reduced turnaround times from weeks to 1 day and improved technical resolution, validated with RAGAS scoring.
- **AI-Driven Business Insights**– Delivered predictive CLV analytics (BG/NBD model) and automated FDA competitor analysis with a Clinical Design Bot, cutting clinical design cycles from months to weeks.
- **Operational Efficiency**– Championed org-wide adoption of GitHub Copilot and AWS CodeWhisperer, reaching 30–40% adoption in 6 months and raising developer efficiency by 15%.
- **AI for Service, Support, and Business Operations**
  - **Intelligent Service Automation**– Deployed an NLP-based classification model (spaCy, multiclass architecture) in ServiceNow to categorize unstructured work order fields, reducing manual triage from days to minutes and freeing engineers for higher-value tasks.
  - **Supply Chain Optimization**– Built a machine learning–based batch-level forecasting solution to overcome limitations in Kinaxis planning. Leveraging demand signals and batch-level features (XGBoost regression), the system generates optimized supply plans that balance demand fulfillment with inventory efficiency
  - **Sales Forecasting**– Developed predictive sales models leveraging historical data and probabilistic methods, delivering more accurate forecasts and aligning sales, marketing, and operations to drive revenue growth.

EDUCATION

- Master's in Data Science  
UC Berkeley | 2024
- Executive Management GMP  
Harvard Business School | 2014-2015
- University of Berkeley, California  
Project Management | 2008-2010
- Smith College, Northampton, MA  
Molecular Biology Bootcamp | 2005
- Maharishi University, Fairfield , Iowa  
Masters in Computer Science | 1999- 2001
- Madras University, Madras , India  
Bachelors in Computer Science | 1995-1999

TECH STACK



TECH TALKS & PANELS

- Panel speaker: [From Hype to Health realizing the power of Ai in Health Tech](#)
- [HLS402] [Getting into Your Genes: The Definitive Guide to Using Amazon EMR, Amazon ElastiCache, and Amazon S3 to Deliver High-Performance, Scientific Applications. | 2014](#)
- [ARC311] [Decoding The Genetic Blueprint Of Life On A Cloud Ecosystem | 2015](#)



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Leading product development to support the \$1.5B Clinical Diagnostic business at BioRad

**Organizational Leadership & Strategy :**

- Led a **150+ global engineering organization**(firmware, software, bioinformatics, cloud, DevOps, and product teams) supporting Bio-Rad's \$**1.5B** Clinical Diagnostics business.
- Oversaw development of **major NPI instrument and informatics platforms**, managing the full product lifecycle from concept and feasibility through verification and tech transfer.
- Established a **low-cost sustaining engineering model** with global partners, improving cost efficiency (reduction from 40% - 30%) and enabling flexible talent scaling **for on-market devices** across Diabetes, Immunohematology, and Immunoassay platforms, ensuring compliance and reliability.

**Operational Excellence & Lean Transformation :**

- Drove lean development practices using daily management metrics, A3 problem-solving, and structured improvement plans to enhance product definition, execution, and quality.
- Fostered a culture of continuous improvement and operational excellence by introducing and scaling lean principles across global teams.

**Innovation & Culture Building :**

- Conducted **annual global hackathons** across the US, Europe, Israel, and India—raising idea-to-product conversion rates from **15% to 50%**, resulting in innovative features integrated into commercial products.
- Encouraged cross-team collaboration and **co-creation of innovative solutions**, embedding experimentation and rapid ideation into the organizational DNA.

- **VICE PRESIDENT OF ENGINEERING, SOFTWARE** QIAGEN INC, Feb 2019 - December 2021

- People Influencer instilling the **leader-leader culture** among teams of **100+ developers, data scientists & architects, directors** across US, Denmark & Romania empowering them to build transformational products.
- Organization designer creating **CoE for Cloud, Big data, Data Science, Bioinformatics and Architects** across different locations with clear definition of ownership, collaboration and dependencies.
- Created a dynamic team to adapt to new technology trends through **technology partnership** with leaders like AWS, Intel, Google, HP etc. for scaling performance, enhance big data offerings, AI/ML innovation.
- Collaborate cross functionally & divisionally with Business leaders , Sales, Service & Support organizations to create strategy, roadmap and partnerships that drives short term & long term revenue growth.
- **Leading the data science strategy** for the division from definition to execution by reimagining the **big data and insights offerings** (20M curated findings, 30K disease classes, 40+ integrated databases) to new customer personas, **the data scientists** rather than Biologists to create insights for Drug identification, Drug repurposing etc.
  - key focus areas : DATA (Data lake, graph networks) , API, PREDICT PLATFORM (AI models) & EXPERTS
  - AI/ML innovation in R&D through pilot projects with partners like Google, Auto ML H2O.ai, JADBio etc.
  - Refresh internal skillsets and learning opportunities through focused Deep Science AI/ML hackathons.
- Execute continuous development and release of Product Portfolios to support 90,000+ users worldwide.
  - Discovery portfolio (10+ products, Big Data Insights from curated content on Genes, Pathways, Drugs, Disease, etc. obtained from)
  - Clinical Portfolio ( 5 products, Clinical Decision Support Software & Real World Data)
  - Tech stack : AWS cloud (S3, Lambda, Spot instances, Redshift, AWS Data Exchange etc.), hosted solution on QIAGEN Data center, Cloud bursting into AWS, ELK stack, AI/ML (SVM model, Tensorflow, H2O.ai)
- Established a **Product Life cycle & Commercialization process** in partnership with external vendor S2Insights to drive a **phase gate approach** to enable product ideation, understand business viability & NPVs, drive precise execution, and enable coordinated launch activities for commercialization.
- Drove **operational efficiency** across business division by partnering with PwC to identify metrics on historic vs forecast revenue CAGR in comparison to product maturity curve, operating ratio from R&D spend as a % of revenue and drive the following optimization efforts : EOL low growth and negative Opex ratio products, transition to low cost GEO, execute site & infrastructure consolidation, reinvest in high growth products.

- **DIRECTOR, SOFTWARE ENGINEERING** - ThermoFisher Scientific, Jan 2015 - Feb 2019

- Launched the the first **IoT enabled** real time qPCR instrument platform ( QuantStudio 3 & 5, QuantStudio 3D) in the Genetic Science Division that contributed to **5% incremental sale** of the instrument.
- Built Smart connected workflows through IoT enabled Instruments powered by features like **remote monitoring, embedded Alexa, Face ID, Smart service workflow, Smart consumables** through intelligent RFID. (QuantStudio)
- Lead the strategy & execution of scalable, secure & highly available **15+ scientific SaaS apps** (qPCR & Sanger Sequencing) on Amazon Cloud (AWS) with a current adoption numbers of **30,000+ users**.
- Built Alexa enabled Lab Assistant for internal scientists for error free protocol identification, scientific calculation ,calibration status of instruments, EHS safety etc. driving the vision for **Lab of the future**.
- Reduced the overall **AWS cost** (~800/year) by **30%** through reserved EC2 instances, reserved DynamoDB throughputs, development processes to shut down unused instances etc.
- Lead the smart instruments & algorithms initiative through **hack-a-thon & incubation programs**.
  - (a) predictive maintenance model for instrument that can alert user of power failures 14 days earlier.
  - (b) automated engine to classify failures modes in manufacturing of a consumable that can hold 3000+ DNA sample without any manual intervention using Google Tensor Flow.

- **ASSOCIATE DIRECTOR/SR. SOFTWARE MANAGER** - Life Technologies, June 2008 - Dec 2014

- **TECHNICAL MANAGER, DEVELOPER** Applied Biosystems, June 2000 - July 2008

PROCESSES & FRAMEWORKS



Product Development & Commercialization Process

User centered innovation 10 types of innovation - Doblin

Lean Management Principles (A3, DM, VPM, X- Matrix)

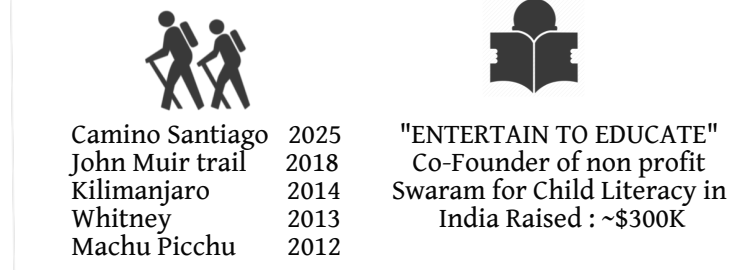
INFLUENCERS

**Charles Darwin** : "It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change"

**David Kelly** : “Enlightened trial and error outperforms the planning of flawless intellects”

**J Krishnamurti**: "An attentive mind is without conflict, therefore free"

HOBBIES



Co-Founder of non profit Swaram for Child Literacy in India Raised : ~\$300K



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