

Karl Mayer

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Indianapolis, IN, USA

Versatile leader with 20+ years IT experience, including systems architecture, design, operations, strategy, personnel management, finance, and communication. Excel at connecting and guiding globally-distributed teams on lean-agile software and value delivery.

Motivational team builder who prioritizes mentoring, networking, and collaboration. Avid reader of technology and innovation, and a hobbyist programmer and data scientist. Creative and tenacious problem solver; able to convey and solve complex business and technology challenges.

Core philosophies: people over products over process; script the critical moves; simplicity as a force

Personal karlmayer.dev **LinkedIn** karl--mayer **GitHub** karlmayer

SKILLS

EXPERIENCE	Cloud Infrastructure, CyberSecurity, Data Science, Design Thinking, DevOps, Distributed System Architecture, Enterprise Architecture, Information Architecture, Innovation Strategy, Personnel Management, Risk Management, Service Management, Solution Engineering
TOOLBOX	AWS, Azure, D3, Docker, GitHub, Jira, Jupyter, Kubernetes, NodeJS, Tableau, VS Code, wikis
LANGUAGES	C#, C++, Java, JavaScript, Python, R, TypeScript

EXPERIENCE

Sr. Director & Lead Architect

Eli Lilly, Global Information Systems Jan 2022 - Present

Architecture lead for Lilly's central IT organization, covering 5 associate VPs and 260 personnel, with a focus on enterprise platforms, infrastructure, and workplace productivity

- Created and host GIS Architecture Council, comprised of 20+ architects, with a mission to accelerate digitalization, catalyze cross-cutting concerns, and improve shared consciousness
 - Enterprise architecture representative, focusing on agile organization architecture, communication channels, business strategy / technology alignment, and technology portfolio rationalization
 - Innovation Council coach promoting innovation frameworks and challenge competitions, including optimizing personnel onboarding, natural language generation, and augmented reality
 - Leading Lilly ELITE TechUP to promote early career professional technical upskilling in data science
 - Guiding strategies in APIs, containerization, cloud security posture management, and knowledge management
 - 4-year Architecture Apprenticeship mentor, and architecture advisor for Lilly Capability Center of India (LCCI) architecture team
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Director of Technology & Platforms

Eli Lilly, Research Information & Digital Solutions Mar 2020 - 2021

Managed a team of 20 personnel, globally distributed and focused on biology and chemistry DevOps

- Sustained frequent 1:1s, focusing on individuals' engagement, career growth, technical development, and work prioritization
 - Prioritized joy, wellness, and work-life balance throughout COVID work-from-home
 - Co-hosted an architecture community, and collaborated in Enterprise Architecture, Automation Enablement, and Cloud OCM
 - Sponsored technology platforms for AWS onboarding, Kafka data aggregation, and a GitOps Kubernetes cluster that delighted developers and is estimated to save 9000 developer hours annually
 - Expanded Lilly Capability Center of India (LCCI) organization by conducting dozens of interviews, streamlining onboarding, prioritizing work transition, and cultivating team-of-teams culture
 - Supported annual business planning and 220+ application portfolio rationalization by managing technical debt, information security risk, and total-cost-of-ownership financial information
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Security Advisor

Eli Lilly, Research Information & Digital Solutions Jan 2018 - Mar 2020

Managed the Research information security initiative portfolio, led AWS Well-Architected, risk assessments & threat modeling, and championed security-by-design

- Collaborated with Global Information Services and InfoSec organizations to achieve risk reduction objectives, including assessing and remediating 35 security critical systems; transitioning 7 business-supported systems to IT; and supporting organizational change to eliminate 82 B2B VPNs
 - Balanced security and business efficiency by evolving R&D Business Development processes, assessing pre-patent confidential information risks, and influencing InfoSec guidance
 - Led Collaboration Informatics solution to rapidly provision cloud data science environments, and engaged infrastructure and security teams to accelerate cloud solutions, including High-Performance Computing in AWS, Clinical Data for Research, Research data lake, lab network modernization, and a Kubernetes-based data science platform
 - Co-led Research IDS CloudOps and advocated cloud transformation, DevSecOps mindset, container-driven collaboration, and enhancing developers' experience
 - Organized monthly AWS lunch & learns with 20+ attendees, and established GitHub projects for innersourcing and knowledge sharing wikis
 - Frequent collaborator with Advanced Analytics & Data Science (AADS) organization, supporting Enterprise Data Backbone and Joint Information Architects, and AADS Visual Analytics Community of Practice co-chair with monthly attendance of 60-80 participants
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Clinical Results Architect

Eli Lilly, Medicines Development Information & Digital Solutions Jan 2013 - 2018

Domain architect for Clinical Data Flow, Biometrics and Product & Project Management systems across five managers

- Founding member of Medicine Development's Architecture Office, and owner of clinical business architecture strategy and accompanying artifacts
 - Facilitated an 8-month RFP (request for proposal) and use case evaluation for a multi-million, cloud-based Clinical Data Flow platform. Co-led staffing a new organizational unit and fostering two external company partnerships. Planned a 3-year roadmap for data pipelines from 10 source systems into a clinical results warehouse.
 - Architected CLUWE, a modern, clinical data statistical computing environment, and navigated the 20+ personnel team through scoping, prioritization, and intrapersonal conflicts
 - Led LogicView, a pioneering solution for centralized risk-based monitoring of clinical patient safety & data quality that yielded \$10M first year savings. Grew project team to 12, managed budget, and oversaw development for 13 studies and 60+ analytics. Participated in authoring the TransCelerate BioPharma Risk-Based Monitoring Technology White Paper.
 - Developed an interactive Tableau map of migraine patient density that aided Biomedicines in finding two additional study sites of previously unrecognized patient saturation
 - 3-time creative lead for IT Conference game shows, taking inspiration from Shark Tank, The Voice and Hollywood Game Night, to combine fun with innovation, and 5-time speaker on topics including gamification, web service design and agile methodology
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Solution Delivery Consultant

Eli Lilly, Lilly Research Labs Jan 2011 - 2014

Technical lead and systems engineer for Discovery IT systems, including RRL (Research Results Loader), CISCO (Clinical Information Surveillance of Competitor Organizations), and CSI (Crowd-Sourced Intelligence)

- Team and product lead for RRL, a web-based, self-service data processing solution. RRL has been in production use for a decade, verifying and loading tens of thousands of internal and external datasets.
 - Technical lead for CISCO, a solution to optimizing clinical enrollment strategies and discover potential health care provider participants
 - Team lead for 8 engineers and informaticians designing CSI, a competitive intelligence data mining solution based on semantic web linked data
 - Hosted bi-monthly software engineering forums for two years; voluntary attendance averaged 15
 - Rehomed and refactored a complex translational research solution from Singapore to US in 3 months, which included two data center migrations, multiple databases, and .NET, Java & R codebases
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Sr. Systems Engineer

Eli Lilly, Lilly Research Labs Jan 2006 - 2011

Technical lead and systems engineer for Discovery IT systems, including Discovery Target Analysis Tool (DTAT), In Vitro Results Sweeper, and service-oriented architecture (SOA) strategy

- 2-year product lead for DTAT, a bespoke discovery research system used by 500 LRL scientists and developed by 15+ engineers and informaticians in the US, Europe, and Singapore. DTAT's 22 modules surfaced genomics and proteomics information; competitive intelligence; and Research data and wikis. Developed a competitor drug landscape module, automating months of manual curation.
- Designed and developed In Vitro Results Sweeper, a custom ETL engine with a XML DSL (domain-specific language) that replaced 3 ETL systems and supported 15 external collaborations
- Spearheaded using Semantic Web technology for linked data, including graph databases, OWL & SPARQL
- Three-year contributor to Microsoft's ASP.NET Web API and Open Data advisory groups
- Presented applied use of agile methodologies to IUPUI senior software engineers for five years

Systems Analyst

Eli Lilly, Global Business Integration Project Jan 2002 - 2006

Training administration solutions technical lead

- Introduced automated testing of the GMP-validated (Good Manufacturing Practice) training system to increase change velocity and decrease defects
- Doubled the efficiency of training data EDI with SAP, and designed GBIP's first SOAP web service to integrating a MES (Manufacturing Execution System) in Sesto, Italy
- Designed Web 2.0 reporting, prior to JS UI frameworks, to improve supervisor user experience
- Redesigned database schema and migrated 40M records to reduce report queries from hours to seconds

Systems Administrator, concurrent with university studies

Ready Machine Corporation Jan 2000 - Jan 2002

Sole IT professional supporting a 40-employee tool & die business. Procured software and computer hardware and installed Ethernet network. Developed and integrated a custom inventory system with a commercial ERP system.

PUBLICATIONS

Risk-Based Monitoring Methodology TransCelerate BioPharma Inc. Oct 2014

Contributing author on technological enablement of clinical risk-based monitoring

Life Science Grid SourceForge Apr 2008

Sponsored Eli Lilly's first open-source software product, a .NET framework for developing scientific applications

AWARDS

7-time CIDO (Chief Information & Digital Officer) Award Finalist Eli Lilly

Solutions: CATS (GitOps-Kubernetes Platform), Clinical Data For Research, Collaboration Informatics, Clinical Data Flow, Clinical Risk-based Monitoring, Competitive Intelligence Data Mining, Discovery Target Assessment

VOLUNTEERING

Mentor Collective, Indiana University Women & Technology

Collegiate Mentor Jul 2022 - Present

Mentor for collegiate and early career technology majors

LillyCon Employee Activity Group

Co-chair Jan 2012 - Present

Established and plan a 100+ member group for enjoying tabletop gaming

4-H & FIRST LEGO Robotics

Assistant Coach Feb 2022 - Dec 2022

Coached STEM innovation, LEGO robotics design, and Scratch programming to 4-7th grade students

Indiana Science Initiative

Volunteer Aid Jan 2013 - Jan 2014

Supported I-STEM programs for 1st and 2nd grade students

EDUCATION

Indiana University

Aug 1998 - May 2002

Bachelor of Science, Honors - Computer Science

Indiana University

Aug 1999 - May 2001

Minor - Kelley School of Business

CERTIFICATES

- Feb 2023 - Certified SAFe 5 Lean Portfolio Manager
- Dec 2022 - Certified SAFe 5 Architect
- Oct 2022 - Certified SAFe 5 Agilist (Leading SAFe)
- Jan 2021 - Lilly Global Leadership Program
- Jan 2018 - AWS Cloud Practitioner
- Jan 2012 - ITIL Service Management Foundation
- Jan 2012 - Lilly Targeted Ambassador Program - compliance, controls & auditing
- Jan 2009 - IDesign Architect's Master Class
- Jan 2009 - TOGAF Foundation
- Jan 2007 - Software Engineering Body of Knowledge (SWEBOK)

For devs & data geeks, my resume is available as a YAML data file and rendered using <https://jsonresume.org/>