

# Mugunth Kumar (MK)

CTO & Engineering Leader

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I build AI-powered systems that scale. As CTO at Pink Cloud, I'm spearheading the Australian expansion of this evidence-based addiction recovery platform from California through strategic partnerships with University of Melbourne, Monash, and government health sectors.

I've spent two decades at the intersection of early-stage technology adoption and hands-on engineering — from pioneering iOS development in 2008 (authored internationally-translated programming books, spoke at conferences worldwide) to building modern RAG pipelines and ML-integrated platforms today.

I specialize in adopting emerging technologies that deliver business impact. I combine deep technical fluency (Python, AWS, iOS) with the ability to structure teams, mentor engineers, and drive strategy across startups and scaleups. I build systems and the teams that sustain them.

## Work Experience

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### Chief Technology Officer • Pink Cloud

May 2025 – Till Date

- Spearheading Australian expansion for Pink Cloud's evidence-based addiction recovery platform ([gopinkcloud.com](https://gopinkcloud.com))
- Building strategic partnerships with University of Melbourne, Monash University, and Turning Point (Australia's leading addiction research centre)
- Liaising with government contacts and academic institutions to establish research collaborations and government partnerships
- Positioning Pink Cloud's AI-integrated platform for enterprise and government health sector deployments across Australia

### Distinguished Technical Fellow • Pink Cloud

September 2017 – April 2025

- Provided strategic and architectural guidance across the full technology stack for evidence-based addiction recovery platform
- Built Subscriptions Management Platform - Django-based multi-tenant subscription system with academic partner analytics dashboard
  - Designed secure subscription code generation system with 5M+ unique combinations and privacy-first architecture
  - Implemented Celery-powered background processing for large dataset exports and automated notifications
  - Built comprehensive analytics dashboard for research organizations tracking participant retention and recovery journey insights
  - Deployed on AWS ECS Fargate with Aurora Serverless v2, Docker containerization, and CI/CD via GitHub Actions

- **Built Meeting Data Platform** - Comprehensive ETL system for aggregating addiction recovery meeting data
  - Architected FastAPI-based REST API serving meeting data from DuckDB with sub-100ms query latency
  - Designed extensible Python scraper framework using aiohttp and BeautifulSoup4 for multi-source data extraction
  - Implemented monorepo architecture with Docker Compose orchestration, automated testing, and pre-commit hooks
  - Deployed scraper as scheduled ECS Fargate task and API as auto-scaling ECS service with ALB, reducing operational costs to ~\$30/month
- Supported product and engineering leadership on technical decision-making, team structuring, and scaling architecture for growth

#### **Principal Engineer • Coles**

**Mar 2025 – Jun 2025**

- Strategic short-term contract to evaluate and integrate advanced AI-powered search platforms into the mobile app experience.
- Worked across GraphQL, TypeScript, and Swift to build integration proof-of-concepts and evaluate developer experience, scalability, and latency impacts.

#### **Principal Engineer • MightyCursor (AI Startup)**

**Nov 2024 – Feb 2025**

- Architected production-ready, AI-integrated system using FastAPI, and scikit-learn.
- Designed a cross-platform architecture where a Python backend managed AI/ML workloads through XPC services on macOS.
- Used PyInstaller to generate ARM-native binaries for optimized local inference and packaging.

#### **Principal Engineer • PaperCut Software**

**Aug 2023 – Aug 2024**

- Created the company's mobile engineering capability from scratch by forming a mobile guild among Go-focused engineers.
- Mentored and coached 4 internal developers into mobile specialists, eliminating external hiring needs.
- Built a CI/CD pipeline using Bitrise, improving build reliability by over 60%.
- Developed Golang-based BFF services for streamlined mobile-to-microservices communication.

#### **Engineering Manager • Education Horizons**

**Jul 2022 – Jul 2023**

- Led 24 engineers across 5 cross-functional teams (3 local, 2 offshore)
- Restructured team structures within 90 days, coaching tech leads into people leaders and increasing delivery autonomy.
- Introduced Story Mapping to improve cross-functional alignment and reduce engineering/PM communication overhead.
- Implemented a formal incident management process and trained associate engineers to run production releases within 3 months.
- Achieved significant reduction in cycle times and improved delivery velocity.

#### **Engineering Leader • Openpay**

**Sep 2021 – Jul 2022**

- Promoted from Mobile Lead to Engineering Leader within 2 months, managing a cross-functional team of 14 (React.js, .NET, iOS).
- Expanded hiring internationally (New Zealand, Colombia) during COVID, improving team diversity and global delivery capabilities.
- Drove alignment across distributed teams working on complex, multi-platform features.

#### Senior Consultant • Xero

Oct 2019 – Sep 2021

- Delivered Xero Me mobile app within one year.
- Led the migration from Objective-C to Swift using Branch by Abstraction and feature toggles, enabling safe, incremental rollout.
- Implemented A/B testing and phased rollouts, decoupling engineering delivery from product release schedules and reducing risk.

#### Technical Director / CEO • Steinlogic Pte Ltd

Jul 2010 – May 2017

- Founded and scaled a boutique product engineering firm in Singapore, running it successfully for 7 years.
- Led hiring and team growth from 1 to 10 engineers, serving as the primary engineering team for RedMart (Singapore's leading online grocery platform, later acquired by Alibaba for integration into Lazada).
- Designed and implemented a scalable, BFF-style architecture for iOS, Android, and React.js frontends that supported RedMart's rapid growth.
- Created a structured hiring rubric aligned with capability frameworks for consistent, bias-free hiring.

### Side Projects

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#### Founder • MindKraft Studios Group

2024 – Present

- Building **Nool** - An AI-powered reading companion and literary discovery platform that predicts your next read based on your highlights, reviews, and reading patterns
- Technology Stack: Django-based web application with PostgreSQL and Redis for backend; native iOS (Swift/SwiftUI) and Android (Kotlin) mobile apps
- Wagtail CMS integration for marketing website with markdown-first content authoring
- KORReader integration - Built plugin for automatic highlight synchronization from e-readers
- Monorepo architecture with automated CI/CD via GitHub Actions, Docker containerization, and comprehensive test coverage
- Demonstrates full-stack product development from concept to deployment, managing infrastructure, development, and product decisions independently

### Technical Focus Areas

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#### AI/ML & Backend Development

- Build production-grade, AI-integrated system using FastAPI for high-performance APIs and scikit-learn for ML workloads.
- Architect cross-platform AI systems integrating RAG pipelines, and XPC Services for macOS-native workload isolation.

- Experience with AWS Bedrock for scalable, cloud-based generative AI workflows.

### Technical Leadership & Team Building

- Built new technical capabilities from scratch (e.g., mobile guild at PaperCut).
- Reorganized underperforming teams to boost delivery and autonomy (Education Horizons).
- Scaled teams from seed-stage (1 engineer at RedMart) to 10+, balancing quality with speed.
- Coached engineers through tech transitions and career growth milestones. **Impact:** Reduced attrition from 30% to under 5%; improved gender diversity from 5% to 30% through objective, bias-free hiring practices.

### System Architecture & Scalability

- Designed event-driven architectures, Backend for Frontend (BFF) layers, and microservices for complex product ecosystems.
- Implemented Google Pub/Sub for horizontally scalable payment processing.
- Built Redis-based optimization layers and deployed Celery/Django Q2 for background workloads and distributed tasks.
- Delivered safe deployment strategies via feature toggle systems and progressive rollouts. **Technologies:** Event-driven systems, BFF, Redis, Celery, Django Q2, microservices.

### Cloud Infrastructure & DevOps

- Built AWS cloud infrastructure using CDK (TypeScript) with production-grade VPC, Fargate, RDS, and ElastiCache.
- Enabled observability with CloudWatch dashboards, structured logs, and real-time alerts.
- Automated CI/CD pipelines (e.g., with Bitrise) to support frequent releases by junior engineers. **Technologies:** AWS CDK, Docker, Fargate, RDS, ElastiCache, CloudWatch, Bitrise

### Cross-functional Collaboration & Process

- Drove Agile maturity via Story Mapping, DORA metrics, and structured incident management.
- Coordinated globally distributed teams across time zones and technical stacks.
- Designed capability frameworks, technical guilds, and objective hiring rubrics to scale knowledge and team capacity. **Methodologies:** Agile, Story Mapping, DORA metrics, ADRs, Feature Toggles —

## Technologies I Work With

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### Primary Expertise

- Python – Backend & AI/ML systems with FastAPI, Django, and scikit-learn
- Swift/SwiftUI & Objective-C – iOS development since 2008, including large-scale apps and platform migrations
- AWS – Infrastructure-as-code with CDK; services include Fargate, RDS, ElastiCache, and CloudWatch
- Golang – Microservices and Backend-for-Frontend (BFF) design for mobile-facing APIs

- Docker – Containerization and local dev automation
- Redis – High-throughput caching, job queues, and message brokering

### Additional Proficiency

- Kotlin & Kotlin Multiplatform – Cross-platform mobile development
- React.js & Node.js – Full-stack JavaScript for web platforms
- Kubernetes – Container orchestration for scalable deployments
- C# .NET, Java, PHP – Enterprise backend systems and service layers
- Scala – Data processing and analytical workloads

## Publications

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- *iOS Programming: Pushing the Limits* (Wiley) A trilogy of advanced programming books covering iOS 5, 6, and 7, widely adopted by professional developers and universities.
  - Translated into Spanish, French, and Chinese
  - Used as a course textbook at the **University of Portland**
  - Demonstrating significant influence in the iOS development community

 [Author Page on Amazon](#)

## Philosophy

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I believe in Kaizen (continuous improvement) and occasional Kaikaku (radical change) when needed. My leadership style focuses on transparency, data-driven decisions, and fostering an environment where both technical excellence and human connections thrive.

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