Kenneth Gao | hello@kenf.dev | www.kenf.dev
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EDUCATION

National University of Singapore   Expected Grad: Dec. 2026
B.Eng Computer Engineering (E-Scholars Programme), IEEE-Eta Kappa Nu (HKN) | 4.96 GPA

EXPERIENCE

Software Engineering Intern @ *Open Government Products*   Sep. 2025 - Feb. 2026
OGP builds technology for the public good, solving problems for citizens and public officers
- Architected a unified ECS job runner for background tasks, improving system reliability and decoupling operations
- Enhanced job observability via Datadog APM and structured state tracking for traceability and idempotent retries
- Designed a fault-tolerant archival pipeline for offloading bloated tables using AWS EventBridge, resulting in a 40% increase in query speed by mitigating database contentions and deadlocks
- Engineered a low-memory report aggregation service by streaming data between S3 buckets, enabling efficient large-scale data exports and reducing download latency from over 300s to under 2s
- Integrated new ACL framework to decouple authorization from validation, resolving critical VAPT security findings
- Optimized middleware to eliminate redundant database queries, resulting in latency improvements of up to 20%
- Utilized LocalStack to mock infrastructure, streamlining local development and eliminating unreliable test mocks

Software Engineering Intern @ *Binance*   May 2025 - Aug. 2025
Binance empowers users to trade, invest, and manage cryptocurrencies seamlessly and securely on a global scale
- Implemented a caching service for third-party APIs, improving data retrieval performance by 50%
- Explored rate limiter implementations to ensure system stability via managing API request rates
- Designed intuitive, action-centric RPC endpoints to abstract underlying systems, reducing integration complexity

Founding Software Engineer @ *Pallo (formerly Check, Iterative W25)*   Feb. 2025 - May 2025
Pallo offers an AI tutoring platform that enhances student performance with personalized, curriculum-aligned learning
- Engineered and launched over 5 novel features, driving a 40% surge in user retention and engagement
- Optimized daily pg_cron jobs to ingest thousands of session results for identifying students' areas for improvement
- Implemented client-side caching and lazy loading, reducing load times by over 80% to improve user experience

Software Engineering Intern @ *London Stock Exchange Group (LSEG)*   Jun. 2024 - Dec. 2024
LSEG Labs addresses challenges in financial markets by assessing climate risks and simplifying ESG disclosure
- Utilized Infrastructure as Code (IaC) with Terraform to provision micro-services for a data ingestion pipeline, reducing provisioning times by 90% and maintaining idempotency across multiple development and test environments
- Designed and deployed infrastructure using AWS SNS for efficient Pub/Sub data-sharing between micro-services
- Led development of replay feature with Athena for event-driven architecture, accelerating disaster recovery by 80%
- Built CRUD module for hierarchical data access permissions using composite keys in AWS DynamoDB (NoSQL)
- Explored WASM SQLite with NoSQL backend, enabling complex analytics and cutting down backend calls by 50%

PROJECTS / EXTRACURRICULARS

LowFat Memory Safety for C/C++ | LLVM instrumentation pass & runtime   Jan. 2026 - Present
- Recreating LowFat Pointers bounds checking for LLVM 21 based on Duck & Yap (CC'16)

Proxmox VE Homelab | repurposed laptops running LXC containers and VMs   Feb. 2024 - Present
- Implemented HA for 2-node Proxmox cluster using QDevice for quorum and ZFS replication for data redundancy
- Enhanced security posture by facilitating p2p connections with Tailscale as a Zero Trust Network (ZTN) solution
- Configured a reverse proxy on a DigitalOcean droplet to handle SSL termination, optimizing network performance
- Automated off-site backups to Backblaze B2 using systemd timers and rsync, with status updates on Telegram

Insecure File Service | simple file sharing service for public use - ifs.kenf.dev   Sep. 2024 - Present
- Designed a serverless file sharing service using AWS Lambda, CloudFront, and S3, managed with Terraform
- Adopted by 50+ users for sending files to public printers, eliminating the need for insecure public machine logins

TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, Ruby, Java, C, C++, SQL, MongoDB, Cypher, Terraform, Bash
Frameworks: Next.js, React, React Native, Plasmo, Node.js, Spring Boot, Flask, Django, FastAPI, Ruby on Rails
Developer Tools: Git, Docker, AWS, Microsoft Azure, Google Cloud Platform, Firebase, Supabase, Neo4j