Roman Khmelichek

resume@romankh.me   **Brooklyn, NY**

SUMMARY OF QUALIFICATIONS

- Full-stack developer experienced in architecting, building, maintaining, and deploying critical enterprise-class Java applications.
- Drove organizational growth-enabling initiatives, such as:
  - Organization-wide deployment of SAML for Single-Sign-On.
  - Container adoption in CI/CD for builds, integration tests, and deployments across all teams.
  - Development of CLIs and web portals used by developers and support staff.
- As a key contributor on a small team, launched an equity research consumption platform that gained traction with institutional clients including major asset managers, leading hedge funds, and quantitative investment shops.
- Architected the cloud migration of a multi-tenant SaaS fintech platform from on-premises to AWS, delivering automated infrastructure and deployment processes.
- Built and optimized enterprise search solutions with Apache Lucene and Elasticsearch, implementing relevance ranking, query optimization, query rewriting, and snippet generation.

EXPERIENCE

BlueMatrix   **New York, NY**
Lead Platform Engineer   **January 2024 — Present**

- Automated and scaled a multi-tenant SaaS fintech platform from thousands of on-premises VMs to EC2 instances on AWS. Developed a dynamic Ansible inventory and playbooks to bridge on-premises, AWS, and Kubernetes deployments. Created an Infrastructure as Code (IaC) solution for re-usable modules across different environments and AWS accounts.
  Technologies: AWS Account Factory for Terraform (AFT), AWS CodeBuild/CodePipeline, Terraform/Terragrunt, Ansible, Packer.
- Designed and executed business continuity planning (BCP) exercises where we successfully demonstrated that failing over an on-premises datacenter to AWS can result in an RTO of less than 30 minutes.
- Led platform engineering initiative to improve microservice development experience using Kubernetes (Amazon EKS) and Telepresence, resulting in a shortened development feedback loop and simpler local environment setup.
- Developed an Ansible collection and playbooks for onboarding developers to get their environments up and running.

Senior Java Developer   **June 2011 — December 2023**

- Architected, developed, and scaled Research Manager, a greenfield project designed to connect buy-side analysts to sell-side research. The core architecture consisted of a Spring web UI and REST APIs, a Lucene search backend, a document ingestion service, and MySQL databases for storing normalized documents and analytics. Lucene's near real-time search capability was used to build the financial research search engine. A taxonomy index enabled us to build a faceted search interface that supported drill-down and drill-sideways searches. The search cluster consisted of 8 VMs, serving 20 million documents, ingesting thousands of new documents daily from multiple data centers via an ActiveMQ store-and-forward broker-network. Supported the sales process as technical lead and direct point-of-contact with trials and integrations of APIs.
  Technologies: ActiveMQ, Lucene, Spring Boot, Knockout.js.
- Designed and developed a Node.js server and reactive client for in-browser document analytics to track and quantify readership engagement.
  Technologies: Express, Kafka, RxJS, TypeScript.
- Enhanced suite of SaaS authoring, analytics, and distribution products used to publish sell-side equity research.
- Maintained 24/7 system availability through on-call rotation, responding to production incidents, and implementing preventive measures.
- Rebuilt the BlueMatrix website to support company-wide rebrand, including a custom email invitation and registration system used for the annual client forum.

The Hotlist   **New York, NY**
Software Engineering Intern   **October 2010 — January 2011**

- Worked with PHP, MySQL, and the Sphinx search engine to match Citysearch.com and Hotlist venues to improve valid business pages with reviews, photos, and related categories.

FactSet Research Systems   **New York, NY**
Software Engineering Intern   **Summer 2009**

- Designed and implemented a Java daemon to monitor and email alerts about referential integrity errors in MySQL MyISAM tables. This allowed early detection and resolution of errors with problematic external data feeds.

Polytechnic Institute of NYU   **Brooklyn, NY**
Undergraduate Research Program   **Summer 2008**

- Developed a single-page AJAX dashboard for monitoring distributed system health in a chaos engineering simulation environment.
  Worked on a multithreaded C++ chat daemon featured as one of the services in the environment.
  Work resulted in publication in SIGCSE 2009:
  Virtualized Games for Teaching About Distributed Systems

Web Developer / System Admin   **Spring 2007 — Spring 2008**

- Administered RHEL server hosting the Honors Program website built with PHP, MySQL, and GWT.
  Collaborated with program director on content management and site updates for events and announcements.
  Provided technical support to students and faculty for large-format printing services.

EDUCATION

NYU Tandon School of Engineering   **Brooklyn, NY**
Master of Science in Computer Science   **2009 — 2011**

- <u>Master's Thesis</u>: Search engine toolkit capable of indexing and querying terabyte size collections. Developed and implemented query optimization algorithms to speed up query execution without loss in result quality.
  Implementation of a Search Engine with Rank-Safe Query Optimization Algorithms
  <u>Source Code</u>: github.com/romank8k/poly-ir-toolkit

Bachelor of Science in Computer Engineering   **2006 — 2011**

- Graduated summa cum laude.

PROJECTS

- This résumé was laid out and formatted with a tool I built.
- Ansible collection used by playbooks to configure my personalized local environment.

TECHNICAL SKILLS

- **Programming**: Java, Node.js, TypeScript, Perl, Python, C, C++.
- **Cloud & Infrastructure**: AWS, Terraform, Terragrunt, Ansible, Packer, Docker, Kubernetes, HAProxy.
- **Databases & Search**: MySQL, Cassandra, Lucene, Elasticsearch, Redis.
- **Message Brokers**: ActiveMQ, Kafka.
- **Observability**: Amazon CloudWatch, Prometheus, Grafana, Kibana, DataDog.
- **CI/CD**: AWS CodeBuild / CodePipeline, GoCD, Jenkins.