

John Noecker Jr.

Backend & Distributed Systems Engineer

Product-minded — Kotlin · TypeScript · Python — End-to-end delivery
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SUMMARY

Product-minded software engineer with 15+ years of experience shipping scalable, fault-tolerant systems end-to-end. Deep JVM expertise (Java, Kotlin) with recent independent work delivering production-grade distributed servers, desktop applications, and NLP pipelines across Kotlin, TypeScript, and Python. Emphasis on complete products, reliability, thorough testing, and pragmatic architecture.

TECHNICAL SKILLS

Languages: Java, Kotlin, TypeScript, Python, SQL

Backend & APIs: Spring Boot, Ktor, FastAPI, gRPC/Protobuf, Node.js, REST, Kotlin coroutines

Frontend & Desktop: React, PixiJS, Tauri, Zustand, Vite, xterm.js

Datastores: PostgreSQL, Redis, DynamoDB, S3, Flyway migrations

Cloud & DevOps: AWS, Cloudflare R2, Docker, GitHub Actions, Jenkins, CI/CD

Testing: JUnit, pytest, Vitest, Jest, deterministic coroutine testing, integration testing

Observability: Prometheus, Grafana, Micrometer, structured logging, alerting

EXPERIENCE

Noecker & Associates

Aug 2020 – Present

Staff Software Engineer (Independent / Freelance)

- Served as the senior technical contributor on client engagements, owning architecture, delivery, and production support for backend and cloud systems end-to-end.
- Designed and delivered backend services and APIs in Spring Boot (Java, Kotlin) and Node.js (TypeScript), modernizing legacy monoliths into maintainable systems with observability-first design.
- Reduced deployment time by 60% through CI/CD pipeline improvements; advised on architecture reviews, production incidents, and long-term system evolution.

Enzyme

Jan 2019 – Jul 2020

Senior Software Engineer

- Built a greenfield platform using TypeScript, React, and Node.js to automate backend workflows supporting FDA 510(k) data extraction.
- Designed backend services for large-scale document processing with strong correctness and auditability requirements.
- Worked closely with domain experts to translate regulatory constraints into maintainable backend systems.
- Implemented backend validation and audit trails to support regulatory review and internal compliance requirements.

Signifyd

Aug 2016 – Dec 2018

Software Engineer

- Improved backend throughput and latency by optimizing caching strategies and service performance characteristics.
- Reduced recurring data costs by approximately \$100K/month through vendor evaluation and integration of more efficient data sources.
- Contributed to production systems operating at scale with an emphasis on correctness and availability.
- Participated in architectural discussions around service boundaries, caching layers, and data flow under high-volume transaction load.

Juola & Associates

Aug 2010 – Jul 2016

Software Engineer

- Designed and implemented production-grade systems supporting forensic and legal analysis, used in national security and high-profile litigation contexts.
- Ensured methodologies were testable, reproducible, and defensible under legal scrutiny, including standards required to pass Daubert admissibility challenges.

- Published peer-reviewed research, contributed to a \$1.6M government grant, and co-authored two U.S. patents related to authorship technologies.

Evaluating Variations in Language Laboratory

Aug 2010 – Oct 2014

Software Engineer (Applied Research)

Pittsburgh, PA

- Applied authorship attribution systems to high-profile legal and investigative cases, including The Cuckoo's Calling, Bitcoin's Satoshi Nakamoto, and Chevron v. Donziger.
- Developed and maintained in-house analytical tooling and contributed to open-source forensic software (JGAAP), emphasizing reproducibility and methodological transparency.

PROTEUS Technologies

May 2009 – Aug 2010

Software Engineer

Annapolis Junction, MD

- Built tools to parse and summarize extremely large datasets, emphasizing performance, scalability, and reliability.
- Designed a unified data processing system, achieving a 1000x reduction in processing time over ad-hoc workflows.

SELECTED SYSTEMS & PROJECTS

AmbonMUD (Kotlin, TypeScript) — Distributed multiplayer game server with coroutine-based tick engine, gRPC engine/gateway separation, Redis pub/sub, PostgreSQL persistence, React/PixiJS web client, and 26K lines of deterministic tests. Three deployment topologies (standalone, engine, gateway) from a single codebase; Docker/ECR deployment via GitHub Actions.

Ambon Arcanum (TypeScript) — Tauri 2 desktop world-building editor with XY Flow graph visualization, format-preserving YAML round-trip I/O, 6 independent Zustand stores with undo/redo, Cloudflare R2 asset sync with hand-rolled AWS Signature V4, and pluggable AI image generation (DeepInfra FLUX, Runware, Claude API).

mowen (Python, TypeScript – published on PyPI) — Full-stack authorship attribution toolkit with 95 pipeline components across 5 analysis stages, FastAPI REST API with SQLAlchemy persistence, React experiment builder, 658 tests, and 20 bundled sample corpora. Clean-room successor to JGAAP; validated across 70 parallel experiments with every divergence traced to a documented root cause.

EDUCATION

Duquesne University

B.S. Computer Science — B.A. Mathematics

- Graduated summa cum laude; valedictorian in Liberal Arts, Computer Science, and Mathematics.

Georgia Institute of Technology

Graduate Coursework, Computer Science

- Completed advanced graduate coursework in machine learning, artificial intelligence and robotics.

CERTIFICATIONS

AWS Certified Solutions Architect – Associate

Aug 2023 – Present

LEADERSHIP & MENTORSHIP

Karat / Brilliant Black Minds

Jan 2019 – Present

Senior Interview Engineer (Freelance)

- Conducted 3,000+ technical interviews for partners including Citi, Indeed, and Roblox.
- Mentored 500+ engineers through mock interviews and structured, actionable technical feedback.
- Provided calibrated feedback on system design tradeoffs, communication clarity, and production-readiness.

Independent Business Ownership

Jan 2014 – Feb 2025

Owner & General Manager

- Owned and operated a small business for over a decade, managing hiring, training, finances, and day-to-day operations.
- Authored and delivered a state-approved apprenticeship curriculum, mentoring junior professionals end-to-end.

PATENTS

Authorship Technologies — Patrick Juola, John Noecker Jr., et al.
U.S. Patents: US-11605055-B2, US-10657494-B2