

Ken Barry

REAL-TIME TRADING SYSTEMS · DISTRIBUTED SYSTEMS · APPLIED ML

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Location Cork, Ireland

Career break, May 2023 – present (3½ years). I have not been employed since Pythia Sports in April 2023. I have spent the time as a full-time independent engineer, building AuToken, the e-sports prediction platform, the autonomous rover and quant research systems listed below. Screenshots, videos and a commit-by-commit record of that work: ken-barry.com/work

Principal-level Java engineer with 15+ years' experience, most of it in low-latency trading and betting systems. I've owned a real-time platform that traded real money end to end, and led the team building its successor. Over the last decade I've also built my own systems. The largest is **AuToken**, a voice-driven desktop system of about half a million lines of Java with its own 3D engine, music tools and control of my browser, phone and printers. Alongside it runs an e-sports prediction platform whose models beat the bookmakers for years.

PROFESSIONAL EXPERIENCE

Senior Java Developer — Pythia Sports

May 2022 – Apr 2023 · Remote · London

Predictive sports-modelling and automated-trading firm (est. 2014) — fully-automated pricing and risk management for horse-racing and greyhound markets, supplied end-to-end to bookmakers (William Hill, Ladbrokes, Coral).

Improved the live horse-racing data feeds — cutting update latency so prices moved faster through the automated pricing path.

Senior Java Developer — Continuous Software

Jan 2021 – Apr 2022 · Cork, IE

Built full-stack features (React, TypeScript, Node.js, JWT auth) on a government system for Saudi Arabia, delivered to senior stakeholders against fixed acceptance criteria. Principal developer on the RPA pilot that won that tender against nine competitors: it OCR-reads Arabic court documents, extracts the salient information and files an email response to the court.

Senior Java Developer — Deutsche Börse (Clearstream)

Jan 2020 – Jul 2020 · Cork, IE

Clearstream Fund Centre — Deutsche Börse Group's largest investment-funds operation, Cork.

Built back-end micro-services (Apache Camel) to automate classification and reporting of contract notes and fund statements at a regulated clearinghouse, replacing sensitive email-driven processes; stood up an ELK stack for cross-server log analysis.

Senior Software Engineer — RISQ Capital

Jan 2018 – Jan 2019 · London, UK

Sports-finance trading house (est. 2010); automated strategies on global sports exchanges; UKGC-licensed.

Upgraded RISQ's ultra-low-latency tennis trading system with cutting-edge C++ performance techniques, and designed auxiliary Java web services — including lexicographical matching of external tennis-match names to the firm's own.

Gravity / Newton Squared 90 (Matchbook group, via Xanadu Consultancy)

May 2012 – Jan 2018 · Cork, IE

The sports trading business in the Matchbook group, trading on the Matchbook exchange. Became Newton Squared 90 in the 2016 company split.

Principal Java Engineer

Jan 2017 – Jan 2018

Led a team of up to eight building the platform's event-driven successor, in step with the exchange's new architecture, on Kafka and Spring XD with MongoDB, Zookeeper and Redis behind it. Ran 1:1s, performance reviews and sprint planning, and set the CI and code review standards.

Technical Lead

Oct 2015 – Jan 2017

Took over technical leadership of the trading team and carried it through the 2016 company split, when Gravity became Newton Squared 90. Voted joint-MVP with the CTO after the split.

Senior Java Developer & ScrumMaster

Mar 2014 – Oct 2015

Ran the team's Scrum process and led a small team integrating an Asian bookmaker through latency-critical event messaging such as goals and red cards. Flew to Hong Kong as the engineer on Xanadu's first major B2B deal. Voted MVP.

Java Developer

May 2012 – Mar 2014

Designed, built and owned the **market-making and risk platform** that traded on the Matchbook exchange from 2012 to 2018. It priced every event we traded, gave risk managers a live view of positions across all markets, and hedged and shaded prices automatically when large bets came in, across multi-million-dollar accounts in many sports. Cut latency by pulling the slow exchange-linking service into the platform as an in-process library. Took requests straight from the traders and risk managers. Wrote its first line and every line after, and colleagues joked it should have been called Kenbot.

Software Developer — Ericsson

Mar 2011 – May 2012 · Athlone, IE

World-leading provider of telecommunications equipment and services.

Built large-scale network-monitoring and command-line management tools with a small team; completed the Oracle Certified Professional Java Programmer certification during induction.

EMC (now Dell EMC)

Jun 2008 – Feb 2011 · Cork, IE

Multinational leader in information storage and management.

Contract Java Developer

Aug 2009 – Feb 2011

Returned under the same line manager after my degree; built a Swing UI tool helping field engineers migrate large data volumes between storage arrays.

INDEPENDENT ENGINEERING

Voice-Driven AI Desktop System and 3D Engine — AuToken

Aug 2025 – Present

The desktop system I use all day. I hold a mouse button and talk, either into whatever app is open or to AuToken as a goal. For a goal, the model writes Java that compiles and runs inside the live app, against **63 runners** for Chrome, 3D, my phone and my printers, with about 1,800 documented methods to search. Its own **OpenGL 3D engine**, about 180,000 lines with shadows, Gaussian splats, terrain and water, has built a 3.1-million-triangle tennis stadium. The music runner writes MIDI arrangements and mixes them to audio. Each render is described by a second model that never sees the goal, and a judge can reject it. Pure coding it can hand to Claude Code or Codex, keeping the final check. **About 516,000 lines of Java** in thirteen months: I own the architecture and the hard debugging, and coding agents I ran wrote most of the code.

E-Sports Prediction Models & Betting Platform

2016 – Present

A Java platform of about 220,000 lines and 5,700+ commits since 2016, which I designed, built and run on my own. At its core is **machine-learning inference that beat the betting markets**. My Counter-Strike match and map models went into use in 2017 and won for years, until around 20 bookmakers banned my accounts. It now models seven sports, from Dota 2 and Valorant to tennis. Ratings come from a **TrueSkill factor-graph system**, ported from jskills and extended to teams, maps, round handicaps and per-player stats. The CS map model starts from 1,845 candidate features over about 142,000 maps, drawn from round-level economy data, HLTV player stats and head-to-head records, and attribute selection keeps 113. A veto-aware model predicts the picks and bans before pricing each map, and every model is validated in time order. It pulls from about 45 stats and odds sources. A self-hosted orchestrator retrains every sport nightly, refuses to publish stale models and redeploys behind the full test suite. Java 25, Weka, Hibernate/MySQL, Jetty/Jersey, Spring WebSocket.

Autonomous Rover — hardware + software robotics

2026

A self-built four-wheel autonomous robot, whole stack: interrupt-driven **Teensy firmware** (quadrature encoders, a six-sensor time-of-flight ring, IMU), ~90K LOC of Java on a Raspberry Pi 5 for control & odometry, two Kotlin/Compose Android apps, and full mechanical CAD of the chassis and a pan/tilt camera head. Derived a closed-form skid-steer pivot condition from first-principles friction analysis, replaced a PID wheel loop with a measured **feed-forward inverse-map controller**, fused encoder + IMU odometry, and built a **millimetre-accurate overhead computer-vision ground-truth lab** (OpenCV/ChArUco/ArUco — 2.95 mm floor accuracy, 0.06° pose repeatability).

Quantitative Research Platform — multi-venue crypto

2024 – 2026

A ~50K-LOC Spring-Boot system spanning 15 exchanges: a custom binary tick-capture/replay store, cross-venue **lead-lag statistical-arbitrage** backtesting, and an adaptive **market-making simulator** (fair-value, adverse-selection/toxicity, queue-position and inventory models, EV-gated quoting) evaluated walk-forward; earlier iterations added reinforcement-learning agents (Q(λ) with eligibility traces).
Further: a real-time poker bot (a multithreaded Monte-Carlo equity-vs-range engine and ML opponent models); and a shipped production real-time Go server — from-scratch rules engine (positional superko, area scoring), a correct Glicko-2 rating system and WebSocket live play, deployed on AWS with automated TLS.

EDUCATION & CERTIFICATION

BSc Computer Science

University College Cork · 2005 – 2009

Oracle Certified Professional

Java Programmer (OCPJP)

SELECTED EARLIER PROJECTS

EUR/USD Price-Series Prediction

2011

A currency-trading system that beat the EUR/USD spread and commission in simulation (confirmed in the bank's own testing tool).

World Computer Poker Competition

2010–11

Entered the inter-university AI competition (Fixed- & No-Limit Hold'em); placed mid-field at a profit.

TECHNICAL SKILLS

LANGUAGES

Java (8–25), C++, Kotlin, Go, TypeScript/JavaScript, Python, SQL, Bash

DATA & MESSAGING

MySQL, PostgreSQL, MongoDB, Redis, Hibernate, ActiveMQ/RabbitMQ, bbolt

ROBOTICS / CV

OpenCV (ArUco/ChArUco), sensor fusion, control systems, embedded C++ (Teensy), Raspberry Pi

REAL-TIME, BACKEND & WEB

Low-latency systems, concurrency, WebSockets, Jetty/Jersey, Spring (Boot, Integration, WebSocket), Apache Camel, Kafka, Node.js, React

ML, AI & QUANT

LLM agents and tool calling, MCP, local open-weight models (Qwen, Whisper) on CUDA, Hugging Face, Weka, feature engineering, TrueSkill and Bayesian skill ratings, Monte-Carlo methods, reinforcement learning, market microstructure, backtesting

BUILD, OPS & PRACTICE

Maven, Git, Jenkins, Docker, JUnit/Mockito, ELK, AWS/EC2, Agile (experienced ScrumMaster)