

# Nico D'Cotta

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📍 London, UK

Backend Software Engineer with experience in building and scaling distributed systems, as well as in deploying and securing platform infrastructure. Domain experience in financial services, cybersecurity, and custodial crypto-currencies.

## EXPERIENCE

### Senior Backend Engineer

📅 11/'23 — today

**Monzo Bank**

*Engineer III (Security) → Senior Engineer (Payments)*

- Worked both on Payments as building products for retail customers, and in Security in an SRE-heavy role with wide scope.
- Owned secret-management, public-key infrastructure, and preventive and detective security controls (eg. around intrusion, exfiltration, DDoS, etc).
- Maintained critical zero-downtime infrastructure such as Kubernetes, cloud networking, and sensitive key material management.

### Senior Backend Engineer

📅 06/'20 — 11/'23

**Blockchain.com**

*part-time → Engineer → Senior Engineer*

- Owned several JVM (mainly Kotlin) real-time financial services critical for business operation and central to user experience and transaction auditing; like ledger-keeping/accounting and indicative pricing.
- Designed and scaled up stateful distributed systems with an event-driven architecture.
- Reviewed systems' architecture designs and software development methods to cultivate sustainable engineering practices and achieve operational excellence within the wider company.

### Software Engineer Intern

📅 06/'19 — 10/'19

**Emit**

- Four-person startup with its own smartwatch aiming to provide time-analytics to institutional customers.
- Provided real-time insights on customer data by developing data processing pipelines and libraries in Kotlin and Python on top of serverless tech on AWS (Lambda, DynamoDB, ElasticSearch).

## PROJECTS

### Self-hosted infrastructure

Nomad, Nix, NixOS, Go

A HA self-hosted cluster with all the features you can expect from an enterprise-grade platform, including container orchestration, service discovery, a service mesh, a distributed filesystem, etc.

### Multi-Paxos implementation

Elixir, Paxos

Implementation of a variation of the Paxos consensus algorithm (comparable to Raft), as specified in the paper Paxos Made Moderately Complex.

## TECHNOLOGIES

**Proficient in** Go, Kotlin, Nix + NixOS, Gradle

**Experience with** Java, Python, C, Haskell, Typescript, Elixir

Nomad, Kubernetes, Consul, Vault, Terraform

AWS (EKS, EC2, S3, WAF + Shield, IAM)

GCP (IAM, BigQuery, Cloud Storage)

gRPC + protobufs, Kafka, Akka, PostgreSQL, Redis, Cassandra, APM, Docker, React

## EDUCATION

### Imperial College London

Computer Science Integrated MEng  
*First Class Honours*

### French Lycée of Madrid

S-SI Engineering Sciences Baccalaureate  
*Highest Honours*

## ACTUAL LANGUAGES

- Spanish: native
- English: bilingual
- French: bilingual
- Portuguese: advanced

### DJStreamr, collaborative streaming service for DJs

AWS (Lambda, DynamoDB, EC2), Kotlin, VueJS

Music synchronisation protocol implemented as a webapp with an event-driven platform architecture which leverages serverless technology.

### WACC, multiplatform compiler

Kotlin, JVM bytecode, ARM11 assembly

Multiplatform compiler for WACC (a toy language) to JVM bytecode and ARM11 64-byte assembly that supports basic constructs like stack-allocated primitives, and heap-allocated arrays and pairs.