Nico D'Cotta

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London, UK

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

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, NixOS, Golang`

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.

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.

Multi-Paxos implementation

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, DynamoDB, IAM)

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

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

`Elixir, Paxos`

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

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. ,