

André Pinto | Curriculum Vitae

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Experience

The Trade Desk

London - UK

Staff Software Engineer

July 2022 –

I work in the team that owns the real-time bidding components that handle 14M req/s in less than 100 ms. I've:

- designed and implemented the centralisation of ad filtering data structures used in every bidder;
- refactored deduping parser caching layer and expanded its usage saving > 20GB of memory with 99% string dedup;
- tackled tech debt: unused code, bad abstractions, tight coupling, deprecated message broker, company wide library updates...
- identified and fixed performance bottlenecks (lock contention, heap allocations, memory leaks), introduced new memory allocators, and critical telemetry, refactored native memory pools...
- introduced multiple tools and tech solutions: new profiling tools, built thread analyser, documented parallel remote command execution (critical during the biggest outage), EC2-based remote debugging...

Tech: C#, Docker, Kubernetes.

Spotify

London - UK

Senior Software Engineer

May 2020 – July 2022

I worked in the team that owns the product catalog at Spotify, i.e. configuration of offers, plans, subscriptions, discounts, bundles... across all markets. Some of the projects I was involved in were:

- database migration from custom Postgres installation to GCP CloudSQL;
- migration of critical product catalog endpoints from a 10+ years old Python service to a newer Java one;
- refactoring of the entire caching layer of the new service, from data source to population mechanism and operationalisation.

Tech: Java, Python, GCP, Postgres, Docker, Kubernetes.

Quantcast

London - UK

Senior Software Engineer

Nov 2018 – May 2020

I worked in the team that owns the critical components for real-time bidding (RTB). We handled 3.5M req/s in less than 100 ms. I've:

- led, researched, designed, implemented and deployed a complete weighted and distributed load balancing solution with service discovery support, which reduced timeouts from 20% to <1% and throttling (-90% for some clients), while saving the company almost 1M USD/y against an alternative solution;
- split infrastructure for the two main RTB components, migrated OS, simplified configuration management, investigated bottlenecks down to the kernel level and optimised client performance for the new setup resulting in improvements between 60-80% for P99 latencies of multiple calls;
- investigated and fixed multiple company-wide customer critical production incidents;
- optimised RTB performance with user-agent caching, geo data set migration (network call to in-memory lookup), GC tuning (throughput to G1 and heap resize), custom optimised JSON parsing, network traffic shaping for log shipping...

Tech: Java, AWS, Terraform, Linux, TCP, UDP, Puppet, Docker, nginx.

Skyscanner

London - UK

Backend Developer

Mar 2017 – May 2018

Skyscanner, now part of Ctrip, is one of the most popular travel search sites in the world. I was part of their Data Tribe organisation and worked on:

- designing and implementing the new reliable data path for business critical events (> 99.99% data availability);
- designing, implementing and scheduling batch jobs and "on the stream" solutions, to move the entire platform's data (10TB per day) from JSON into an optimised format (Parquet), while making the data sets available for querying in Athena;
- maintaining and improving existent solutions to move data from Kafka into Redshift.

Tech: Java, AWS, Hadoop, MapReduce, Dropwizard, Docker, Python, Airflow, Spark, Scala, Secor, Samza, Rancher.

ClearScore

Backend Developer

London - UK

Nov 2016 – Mar 2017

ClearScore is one of the leading FinTech businesses in the UK. By reaching 4M users since its inception in 2015, it has become the UK's #1 credit checking service. I've worked on:

- performance investigations/testing and optimisations;
- development of new features (weekly credit report updates, coaching);
- improvement of registration funnels.

Tech: Java, Scala, Python, Docker, PostgreSQL.

Spotify

Backend Developer

Stockholm - SE

Mar 2015 – Oct 2016

Spotify is the leading music streaming service in the world and I was one of their backend engineers. I've worked on:

- the development and maintenance of the ingestion pipeline (content and metadata sent by the providers);
- data validation and enrichment;
- indexes creation (>150GB) and distribution (> 300 machines);
- core metadata service (7 regions, 250k r/s, 12M entities/s).

Tech: Java, Python, Crunch, Hadoop, Helios, Docker, PostgreSQL, Puppet, Memcached, GCP, RDF, Apache Jena, gRPC, Luigi, Zookeeper.

Blip (Betfair)

SRE Developer

Porto - PT

Mar 2014 – Feb 2015

Blip (part of Betfair) is a web development company responsible for the biggest betting website in the world (7B views/week and more transactions than all EU stock exchanges combined). I was focused on the scalability of our internal platforms and services. Some of my main responsibilities were:

- exploring and implementing new technologies (e.g. Zipkin) in our core webservices framework;
- maintaining our metric libraries (collectors, aggregators, forwarders);
- investigating and fixing bottlenecks and production issues (database overloads, thread leaks, memory leaks);
- capacity planning and performance testing.

Tech: Java, Guava, Spring, Jetty, Zipkin, Couchbase, OpenTSDB, AspectJ, Python, Go.

Blip (Betfair)

Backend Developer

Porto - PT

Feb 2013 – Mar 2014

Responsible for developing the middleware between our internal APIs and the frontend.

- Data retrieval and processing from the APIs into meaningful structures used by the frontend;
- Improving internal APIs, core modules, development tools and practices;
- Technological exploration to validate potential adoption by the company (e.g. Vert.x).

Tech: Java, Vert.x, Spring, FreeMarker, Selenium, Groovy, JavaScript, AspectJ, Guava.

3DDecide

Software Developer

Porto - PT

Aug 2011 – Jan 2013

Startup in 3D interactivity, augmented reality and virtual tours. I was the main dev for the interactive tech:

- an interactive 3D visualiser product for the web (Unity3D) with a backoffice (Yii framework);
- an interactive totem (augmented reality and video) for the National Railway Museum;
- the business plan for a serious game (2nd place out of 443 in the Creative Industries National Prize).

Tech: Unity3D, C#, Python, C++, PHP, JavaScript, Yii, AForge.Net/GRATF.

Audacity (Google Summer of Code 2009)

Software Developer

Remote

May 2009 – Aug 2009

Tech: C++, Python.

Education

Faculty of Engineering of the University of Porto

Porto - PT

MSc in Informatics and Computing Engineering, 16 out of 20

Sep 2006 – Jul 2011

Thesis: Platform for the development of location-based games

19 out of 20

Programming, Algorithms and Data Structures, AI, Computer Graphics, Networks, Distributed Systems, Web Development, Databases, Compilers, Mathematics, Physics.

Delft University of Technology

Delft - NL

MSc in Computer Science (ERASMUS), 8.5 out of 10

Sep 2010 – Jan 2011

High Performance Computing, Databases and Datamining, Software Reengineering, Real-time Systems