

# Matteo Durante

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## Summary

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- Passionate about mathematics, performance-aware programming and low-level systems
- Experienced in developing scalable web services and applications at Amazon
- Seeking roles focused on performance-critical systems in Rust

## Work Experience

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### Software Development Engineer L4-L5

2022 — Present

Amazon

Madrid, Spain

- Improved performance of author web services by 1200x through optimization and architectural changes
- Increased author-book linking coverage from 88% to 95+% with 99+% precision (up from 97%)
- Developed services to manage and fix author data with AWS, DynamoDB, SQL, Java and TypeScript
- Developed and integrated C++ cross-surface business logic framework into Kindle iOS
- Implemented features for the Kindle iOS Library view, including book deletion, using Obj-C and Swift

### Math Coach

2015 — 2017

Associazione Subalpina Mathesis

Turin, Italy

- Coached prospective participants of the Italian Math Olympics
- Led a no-name school team to the national semi-finals

## Skills

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**Languages:** English (C1, TOEFL iBT 5.5), Italian (native), Spanish (B2, currently studying)

**Programming:** C++, Java, Rust; also Haskell, Kotlin, LaTeX, Obj-C, Python, SQL, Swift, TypeScript

**Technologies:** AWS, git, Linux, perf, shell, tmux, unison, vim etc.

**Concepts:** algorithms, data structures, FP, OOP, performance optimization, systems programming

**Economics:** game theory, microeconomics

**Mathematics:** algebra (algebraic geometry, number theory, and more), analysis (complex analysis, measure theory, ODEs, differential geometry), graph theory, homotopical mathematics (algebraic topology, higher category theory, homotopy theory), mathematical logic, numerical analysis, probability theory, type theory

## Education

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### ALGANT Programme

Leiden, NL (M1) / Regensburg, DE (M2)

MSc Mathematics

2018 — 2022

- Distinction, 1.1 | Focus: algebraic geometry, algebraic number theory, algebraic topology, category theory
- Thesis: [Localizations of Models of Dependent Type Theory](#) (supervisor: [Hoang Kim Nguyen](#))

### University of Turin

Turin, Italy

BSc Mathematics

2015 — 2018

- 110 cum Laude | Focus: algebra, analysis, geometry, logic, numerical analysis, probability theory
- Thesis: From Algebraic Varieties to Schemes (supervisor: [Cinzia Casagrande](#))

## Projects

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- [Polymorphism in C++ and Rust](#): comparison of virtual functions, final, and CRTP with benchmarks
- [sim8086](#): 8086 processor simulator in Rust
- [rtnya](#): ray tracing software in C++
- [Notes on Monad Theory](#)

## Awards

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- [1200+ LeetCode problems solved](#) (top 0.5% globally)
- [Collegio Carlo Alberto's scholarship](#) 2016-2018
- [Bocconi's Math Games](#) (national level): 22nd placement, 2017
- [Alfa Class math competition \(Diderot Project\)](#): 2nd (individual) and 3rd (team), 2016
- Italian Math Olympics finals team placements: 12th (2014) and 7th (2015)