

# 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

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

### 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

## Education

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### ALGANT Programme

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

MSc Mathematics

2018 — 2022

- Distinction, 1.1 | Focus: Algebra and related fields
- Thesis: [Localizations of Models of Type Theory](#) (supervisor: [Hoang-Kim Nguyen](#))

### University of Turin

Turin, Italy

BSc Mathematics

2015 — 2018

- 110 cum Laude | Focus: Algebra, Analysis, Geometry, Logic, Probability
- Thesis: From Algebraic Varieties to Schemes (supervisor: [Cinzia Casagrande](#))

## Skills

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**Programming (professional):** C++, Java, Rust

**Other languages:** Haskell, Kotlin, LaTeX, Obj-C, Python, Shell, SQL, Swift, TypeScript

**Tools:** Git, perf, Shell, Tmux, Unison, Vim et al

**Other:** Algorithms, AWS, Data Structures, Linux, FP, OOP

**Quantitative:** Algebra (Algebraic Geometry, Number Theory, and more), Analysis (Complex Analysis, Measure Theory, ODEs, Differential Geometry), Game Theory, Graph Theory, Homotopical Mathematics (specialization), Mathematical Logic, Microeconomics, Numerical Analysis, Probability Theory, Type Theory

**Languages:** English (C1, IELTS 8.0), Italian (native), Spanish (B2, currently studying)

## 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)