

# Afonso Pinto

afpinto02@gmail.com | p1ntas.github.io/Personal\_Portfolio | github.com/P1ntas

## Skills

**Programming Languages:** Python, Django, Go, JavaScript, Java, PHP, C, C++, R, Dart, HTML, CSS  
**Frameworks:** Express.js, Next.js, Laravel, Pandas, Scikit-learn, NumPy, Matplotlib, Beautiful Soup, Flutter  
**Technologies:** Git, Docker, Google Cloud, AWS, Nginx  
**Databases:** PostgreSQL, MongoDB, Redis, Neo4j, Cassandra

## Experience

- Research Intern** Kevel – Porto, PortugalSept 2024 – Jul 2025
  - Developed SIMD-optimized indexing techniques that enhanced query performance in column-oriented engines, achieving up to 166x speed improvement in specific analytical queries.
  - Integrated vectorized bitmaps and B-trees within real-time analytics systems, reducing query latency by 40% while maintaining scalability.
  - Benchmarked query engines using industry-standard TPC-H tests, demonstrating a 2.5x increase in throughput when combining SIMD vectorization with optimized indexing.
  - Improved CPU cache utilization by processing data in columnar batches, minimizing overhead and enabling parallel execution across SIMD registers up to 512 bits wide.
  - Reduced computational overhead by replacing scalar operations with AVX-512 instructions, accelerating table scans, joins, and aggregations.
- Software Engineer Intern** SecurNet – Porto, PortugalFeb 2023 – Jun 2023
  - Architected an open-source SOAR based on Wazuh, Shuffle, and theHive, to offer a low-cost alternative.
  - Automated SOC workflows to accelerate incident response by 70% in distributed environments.
  - Removed repetitive tasks by implementing scripts for threat containment.
  - Analyzed vulnerabilities with penetration testing, improving detection coverage by 50%.
  - Integrated open-source tools into existing software, delivering real-time alerts for critical incidents.

## Projects

- OptiiScan**github.com/P1ntas/Optiiscan
  - Built an AI-driven tool for extracting product data from images, reducing manual entry by 60%.
  - Enabled icon extraction with computer vision algorithms, outputting product information in JSON or CSV.
  - Refined prompt engineering to ensure consistent JSON structures, lowering formatting errors by 35%.
  - Developed logging and manual correction interfaces, boosting data reliability by 50%.
  - Delivered a fully functional product to the client, MC Sonae, as part of a team following Agile guidelines.
- GrantHub**github.com/diogobabo/GrantHub
  - Centralized and aggregated financing opportunities for Portuguese SMEs, reducing search time by 50%.
  - Provided a user-friendly platform with Angular, Express, and MySQL, including real-time chat functionality.
  - Implemented role-based access control, strengthening platform security.
  - Delivered dynamic application forms and file uploads, accelerating opportunity submissions by 40%.

## Education

- University of Porto** – Master in Informatics and Computing EngineeringExpected July 2025
- Instituto Tecnológico de Buenos Aires** – Erasmus+ Exchange ProgramFebruary 2025
- University of Porto** – Bachelor of Informatics and Computing EngineeringJuly 2023

## Languages

- |            |        |
|------------|--------|
| Portuguese | Native |
| English    | C1     |
| Spanish    | B2     |
| French     | A2     |
| Italian    | A2     |