

# MEHDI NASEF

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mehdnas  
mehdi-nasef

Master's student in Computer Engineering with experience in computer architecture, high-performance computing, and AI background. Passionate about bridging hardware and software to create advanced computing systems.

## EXPERIENCE

### Software Developer – GIS

July 2025 – Ongoing

Contributed to the development of geographic information system (**GIS**) solutions for the energy and mining industries, aimed at reducing hazardous manual inspections and lowering operational costs (**C++**, **Python**, **R**, and related GIS frameworks).

- Developed an **innovative algorithm** for tree segmentation from 3D laser scanning (LiDAR) data, outperforming existing non-deep learning approaches while remaining fully interpretable.
- Assisted in the design and implementation of an **IoT-based GIS platform** to monitor mining facilities, detect structural risks, and prevent potential collapses of tailings storage facilities (TSFs) and mine structures, mitigating environmental and safety hazards.

### CIC Consulting Informático

Santander, Spain

### Researcher – GPU Architecture

October 2023 – June 2025

### Universidad de Cantabria

Santander, Spain

Conducted research on GPU hardware scheduling algorithms to enhance performance and fairness. Developed **MIAS**, a thread-block scheduling algorithm achieving an average  $1.297\times$  speedup over state-of-the-art methods, and **AMIT**, a warp scheduling algorithm designed to improve fairness, as part of my master's thesis.

- Designed and adapted **CUDA** benchmarks and microbenchmarks for GPU performance analysis.
- Extended the **GPGPU-Sim** simulator for architectural modeling and evaluation (C++).
- Applied **Python** (Pandas, Scikit-learn, etc.) for data analysis and statistical validation.
- Authored technical and scientific documents, including the master's thesis and research papers.

### Intern – AI / Computer Vision

May 2023 – August 2023

### Siali

Santander, Spain

Contributed to **computer vision** and **AI** initiatives focused on model research, tool development, and performance optimization.

## PROJECTS



### Interactive Personal Website

- https://mehdi.raptoroid.com
- github.com/mehdnas/mywebsite

Currently in its early stages, featuring a minimal demo. Planned as an interactive, game-like portfolio showcasing personal growth through narrative and design.

## PUBLICATIONS

### Journal Articles

- M. Nasef, B. Perez, and J. L. Bosque, "Memory interference aware thread-block scheduling for gpu multiprogramming," Manuscript in preparation for submission to *Future Generation Computer Systems*, 2025.

### Theses

- M. Nasef. "Adaptive memory instruction throttling for reducing contention in gpu architectures." Trabajo de Fin de Master, Universidad de Cantabria. (Manuscript in preparation).
- M. Nasef. "Hardware support for multiprogramming in gpus." Trabajo de Fin de Grado, Universidad de Cantabria. (2023), [Online]. Available: <https://hdl.handle.net/10902/30800>.

## EDUCATION

### M.S. in Computer Science

### Universidad de Cantabria

Sept 2023 – Ongoing

### B.S. in Computer Science

### Universidad de Cantabria

Sept 2019 – Sept 2023

## LANGUAGES

Arabic

Spanish

English



## STRENGTHS

Fast Learner

Analytical Thinker

R&D Mindset

Proactive

Technically Fluent

Innovative