Stockhom, Sweden

Íñigo Aréjula Aísa

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Education

Stockholm, Sweden	**KTH Royal Institute of Technology**	**June 2025**

- MSc Software Engineering of Distributed Systems. GPA: 4.56/5
- Relevant graduate coursework: Distributed Systems I & II, Data mining, Methods in High-Performance Computing, DevOps and Language-Based Security.

Zaragoza, Spain	**University of Zaragoza**	**June 2023**

- Bachelor in Software Engineering. GPA: 7,96/10
- Relevant graduate coursework: Systems Administration I & II, Databases I, Data Structures and Algorithms, Concurrent and Distributed Systems Programming, Computer Networks, IT Security, Distributed Systems and Computer Architecture.
- Achieved high honours in Programming Theory course, ranking in the top 5% out of a class of over 70 students, showcasing exceptional proficiency in complex programming techniques and paradigms.

Employment

Software Engineer, Intern	**Ericsson**	**June 2024 – August 2024**

- Automated the network creation process, reducing the lead time of network engineers by 2 days.
- Developed a **Jenkins** pipeline that integrates with three different services and Elastic Search as the database to orchestrate the process.
- Worked under agile methodologies, maintaining continuous communication with stakeholders to discuss and agree on all features.

Software Engineer	**University of Zaragoza**	**January 2023 – August 2023**

AI-on-Demand Platform (AI4Europe)
- Developed and implemented a highly scalable and efficient REST API using **Python**, FastAPI, and MySQL.
- Actively contributed to architectural discussions, providing valuable insights to enhance the entire system's design, including the dedicated metadata server. Proposed and implemented a new design for the metadata server, resulting in a 30% reduction in the time required to add a new endpoint to the API.
- Collaborated with interdisciplinary research teams within the University of Zaragoza and international researchers to contribute to the development of research articles.

Academic researcher, Intern	**University of Zaragoza**	**January 2022 – June 2022**

- Contributed to cutting-edge academic research within the Cosmos research group.
- Developed and implemented novel approximate computing techniques in **Python** to significantly reduce energy consumption and execution time for video analysis tasks, resulting in improved efficiency and performance.
- Developed and integrated a containerized solution for seamless invocation of the application from a Function-as-a-Service (FaaS) platform, ensuring efficient and reliable execution.

Technical Experience

Projects

- **Distributed Database for MMO Game**: Developed a distributed database prototype in **Rust** for an MMO game. Key aspects of the project included ensuring atomic updates, implementing a local-first policy to prevent input lag, enabling rollbacks, and using the Omnipaxos consensus algorithm for data and state replication.
- **Optimized Active Matter Simulation: Vicsek Model for Flocking Birds**: Rewrote a Python-based simulation in C++ and applied various optimization techniques, including MPI, multithreading, and OpenMP.

Responsibilities included profiling to identify bottlenecks, developing optimized solutions, validating performance improvements, and creating a comprehensive performance model. Utilized HPC tools such as SLURM and gained in-depth knowledge of supercomputing architectures and performance insights.

- **Data-intensive workflow**: Designed and implemented a data-intensive workflow to predict the results of the USA 2024 elections. The process involved extracting data by scraping Twitter using specific keywords, placing the messages into a Kafka queue, consuming them via Spark, and using sentiment analysis to determine if the tweets support either Trump or Kamala Harris. Finally, the results were stored in a MongoDB database. The entire workflow operated in real-time using data streaming technologies.

Skills

- **Programming languages**: Throughout my studies and career(more than 6 years of programming), I have worked with a wide variety of modern programming languages, with the most extensive experience in Golang, Python, and JavaScript.
- **Version control**: Proficient in Git, used daily across all projects for version control. Primarily experienced with GitHub for remote hosting and collaboration, with additional experience in other platforms such as Gerrit.
- **Unix administration**: Proficient in Unix administration, with hands-on experience managing infrastructure in previous roles. Completed several relevant courses, gaining a deep understanding of Linux systems and bash scripting. Currently working on developing a custom immutable Linux distribution in my free time.
- **Languages**: Native Spanish speaker, fluent in English (C1 proficiency).
- **Open Source Contribution**: Actively collaborate with open-source projects. I have merged PR in projects such as Vanilla OS. I like to help open-source communities by submitting code, making translations to Spanish and discussing on the chats
- **Kubernetes**: Prepared for the CKAD certification by completing an online course and actively participating in Kubernetes laboratories.