ALEJANDRO GÓMEZ NOÉ



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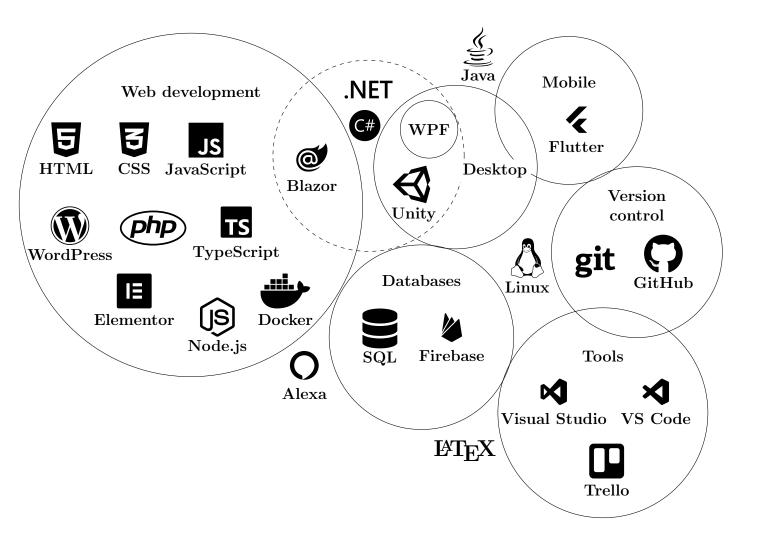
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Alejandro Gómez is a **Software engineer**, currently **working** at the **Universitat Jaume I (UJI)**.

Knowledge



Experience

Research Support Staff — Universitat Jaume I (UJI) (May 2024 - February 2025)

As research support staff in the *Knowledge Engineering* group at *Universitat Jaume I* (*UJI*), I participated in the *MINEGUIDE* project, which aims to develop a **decision support** system in the field of **healthcare** using process mining and clinical guidelines. This is a collaboration between *Universitat Jaume I* (*UJI*), *Polytechnic University of Valencia* (*UPV*), and the *University of Murcia* (*UMU*).

MINEGUIDE Project

My main contribution was to conduct a **case analysis** applying **process mining** techniques to hospital data related to **COPD** (*Chronic Obstructive Pulmonary Disease*), identifying **relationships** and **deviations** between the **real processes** (obtained from the data) and the **ideal processes** (defined in the clinical guidelines), with the aim of publishing the results in a scientific article.

During the process, I also made improvements to the **process mining tool** used, **PMApp** (developed by the SABIEN group at UPV), as well as using \boldsymbol{LLMs} to analyze and extract information from medical data in free text, automating the process and deploying my own to increase security.

$\begin{array}{lll} \mbox{Mid-level software engineer} & -- ITACA\text{-}SABIEN \; (UPV) \\ (March \; 2022 \; -- \; April \; 2024) \end{array}$

As a mid-level software engineer at the **SABIEN** (Technological innovations for Health and Wellbeing) group from the Institute of Applied Information Technologies and Advanced Communications (ITACA), which is part of the Polytechnic University of Valencia (UPV), my work consists on developing applications and providing technical support in various ways in the context of several research projects.

Projects I have participated in

- **MOVE-IT** (2023 2024)
 - Training program for improving physical exercise of people with intellectual disabilities through *exergames* and technology
 - European ERASMUS+ project in collaboration with:
 - * IVASS Instituto Valenciano de Servicios Sociales (Spain)
 - * CERCIOEIRAS Cooperativa de Educação e Reabilitação de Cidadãos com Incapacidade (Portugal)
 - * UiT Tromsø University (Norway)

- * ORAS Ospedale riabilitativo di Motta di Livenza Hospital (Italy)
- I enhanced and refined the apps developed by **UiT** with **Unity** (AGA and Sorterius), addressing existing issues and optimizing functionality
- I implemented a custom backend for the project, including a website with an API for data collection using Blazor, ASP.NET Core Identity and EFCore, which I then hosted in a UPV server
- I successfully integrated the *Sorterius* app with the backend API for user management and data collection during the pilots for later study
- I managed the server and worked alongside the participant centers during the pilots to ensure the apps were working properly
- The pilot tests involved a total of 17 participants over a period of 2 weeks, with a total of 158 gaming sessions. A 77% of the participants increased their use of smartphones as a result of using the application, and their motivation remained high throughout the trial period
- A research paper was published about this project, myself being one of the authors: "A. Henriksen, A. Martinez-Millana, A. Gomez-Noe, G. Hartvigsen, A. Anke, M. Stellander, D. Dybwad, T. Luzi, H. Michalsen, Piloting an Augmented Reality Exergame for Persons with Intellectual Disabilities, Intelligent Health Systems From Technology to Data and Knowledge 2025. https://doi.org/10.3233/shti250600".

• **PM4H** (2022 - present)

- Usage of ${\it Process \ Mining}$ techniques for improving efficiency on the management of information in the health sector
- I developed several features for the "PMApp" desktop application, which runs $process\ mining$ algorithms for treating and visualizing different kinds of data
- Said app is developed in C#, and uses WPF for the user interface
- I have improved the visualization system for tables and histograms, I have added support for using proxies...

• **LIFECHAMPS** (2023)

- European project for improving the quality of life of cancer patients, consisting of a consortium of 15 partners from 10 countries, led by the Aristotle University of Thessaloniki
- I closely collaborated with the IIS La Fe and the company MySphera, configuring
 Raspberry Pi devices and performing a total of 50 installations in patients' homes for
 a multinational pilot project, positioning Spain as one of the countries with the most
 installations in the project
- Additionally, I provided technical support to patients and researchers at La Fe

• **DIAL** (2022 - 2023)

 Voice assistant for the detection and addressing of Unwanted Loneliness in the elderly, based on the open source Mycroft system

- I trained and tested a *machine learning* model so the assistant can be triggered with the phrase "*Hola dial*"
- On top of that, I configured over 20 Raspberry Pi devices so they function as voice assistants by means of the DIAL system
- Orriols Arran de Terra (2022)
 - Website intended for broadcasting news and local activities from the Els Orriols neighborhood in Valencia
 - I developed said website using WordPress and Elementor
 - In order to create some custom features, I built **plugins** with **PHP**
 - I also used HTML, CSS y JavaScript

Education

University

Computer Science degree Mention in Software Engineering Polytechnic University of Valencia (UPV), 2021

University projects

- Al Loro (Repositorio) (Memoria):
 - I implemented by myself an Amazon Alexa skill for my final degree project, using Node.js and TypeScript.
 - I integrated said skill with a database hosted in Firebase, on top of creating a mobile app using Flutter to manage user preferences
 - I designed an authentication system using several AWS services; such as Lambda,
 DynamoDB or API Gateway

Languages

- Spanish, native
- \bullet English, C1 level (First Certificate in English Grade A Cambridge English Level 2)
- Catalan (Valencia), C1 level

Activities

Mentor - Technovation Challenge

I participated as a volunteer mentor for the Technovation Challenge contest organized by Iridescent in its 2019 edition, in collaboration with American Space, an association from the Polytechnic University of Valencia (UPV).