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Alejandro Gómez Noé

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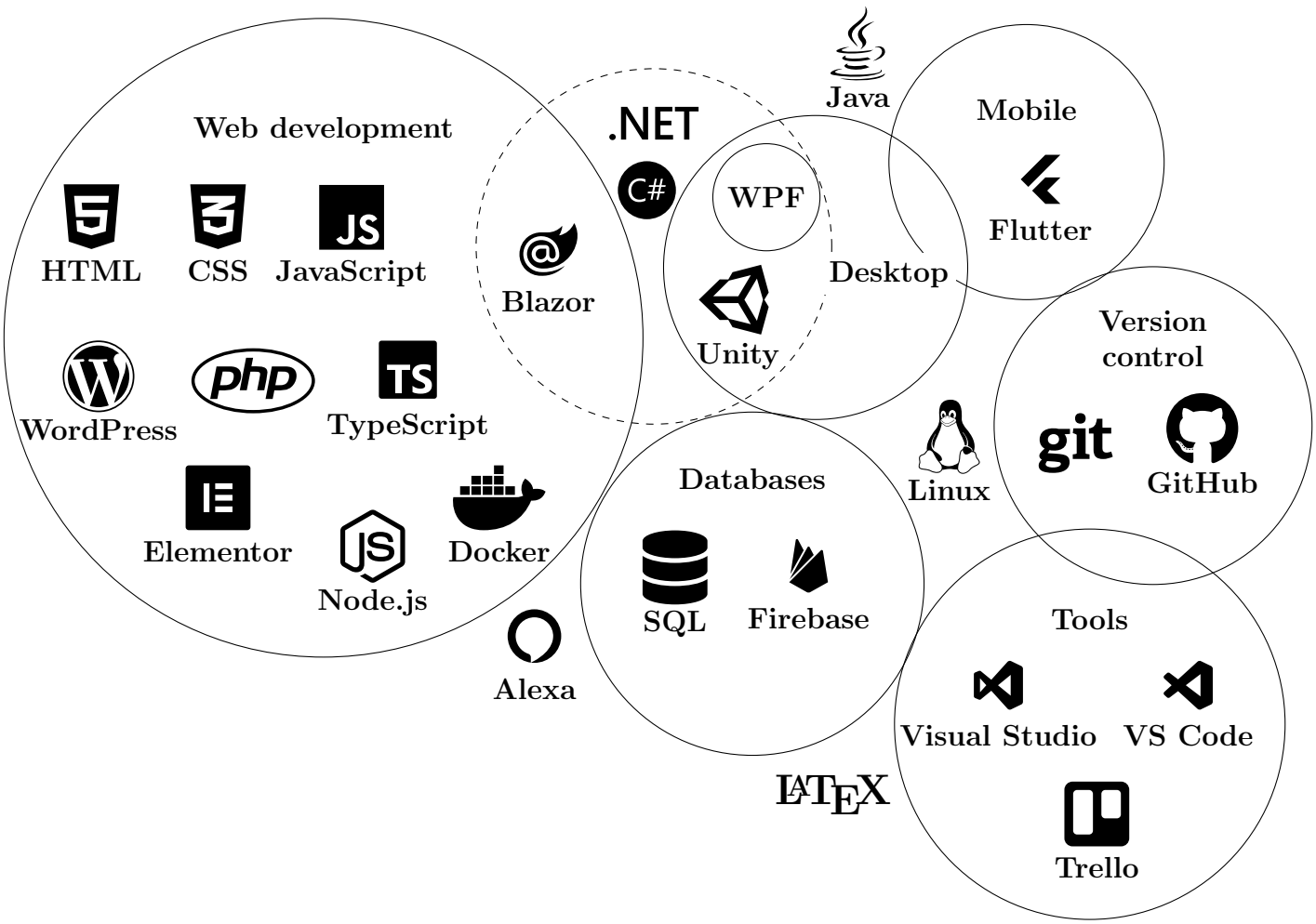
Alejandro Gómez is a **Software engineer**,
currently **working** at the **ITACA-SABIEN** research group
from the **Polytechnic University of Valencia (UPV)**.

Knowledge



Experience

Mid-level software engineer — *ITACA-SABIEN (UPV)*

(March 2025 - present day)

After the project I was previously hired for ended, I came back to my previouse role 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**)*.

Same as before, my work consists on **developing applications** and providing **technical support** in various ways in the context of several **research projects**.

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 ***LLMs*** to analyze and extract information from medical data in free text, automating the process and deploying my own to increase security.

Mid-level software engineer — *ITACA-SABIEN (UPV)*

(March 2022 - April 2024)

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 consisted 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 ***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
- **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)*.