**Jonathan Sansó** - **Ssr. Full-Stack Developer** (**React** / **Next.js** / **NestJS**) | **AI Engineering** (**Applied NLP**, **OCR & Speech-to-Text**) | **Python Data Pipelines** (**Pandas**) | **AWS** (**EC2**, **RDS**, **S3**, **CloudFront**) | **Terraform** (**IaC**) | **Higher Degree in Programming**

**Frontend**: React, Next.js, TypeScript, Tailwind, Bootstrap - **Backend**: NestJS (Node.js), FastAPI - **AI / Data Processing**: Pandas (ETL), OCR (Tesseract), Speech-to-Text (Whisper), NLP pipelines - **Databases**: MySQL, PostgreSQL, MongoDB (Prisma ORM), Supabase - **DevOps & Cloud**: AWS (EC2, RDS, S3, CloudFront, IAM, VPC, Security Groups), Terraform (IaC), Docker, NGINX, Linux (Debian/Ubuntu, self-managed), Vercel - **Tooling**: Git, GitHub

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## Professional Experience

### 1. Argentine Federal Penitentiary Service (Jan 2024 - Present) [Private repositories available upon request.]

#### a) Institutional Platform for Complex Events - Frontend & Backend + AI Engineering
1. **Lead developer** of a **national**-**scale** internal platform across multiple penitentiary units.
2. **Designed** and implemented an **AI microservice** (**Python** + **FastAPI**) for **OCR** and **NLP**, enabling automatic text extraction from **images**, **scanned PDFs**, and **audio** (**speech**-**to**-**text**), with smart field **auto**-**completion** inside institutional forms.
3. **Built OCR pipelines** using **Tesseract** with custom preprocessing, **language models**, noise reduction, and text reconstruction (**de-hyphenation**, whitespace normalization).
4. **Developed OCR** pipelines in **Python** (**FastAPI + Tesseract**) to extract full text from institutional documents, and built an **NLP summarization** module that produces **human-readable summaries** with configurable length; added **security classification** (**LOW/MID/HIGH**) and basic **inconsistency detection**.
5. **Integrated** frontend **AI actions** in **Next.js**: "**Analyze with AI**", **auto-populated fields**, and **human-review workflows**.
6. **Replaced** manual **Excel** workflows by building **Python** (**Pandas**) **ETL pipelines** to standardize large institutional datasets: **header normalization**, **facility code mapping**, **ISO-8601** date conversion, document type/ID parsing, and export of clean files ready for automated **MySQL** imports via **NestJS**/**Prisma**.
7. **Delivered dynamic forms** with complex validations, modals, **file uploads**, and **image croppers**.
8. **Implemented interactive maps** (**Leaflet**/**Google Maps**) for events and **geospatial zones**.
9. **Automated PDF**/**Excel**/**Word** reports with **statistical charts** and **temporal**-**spatial filters**.
10. **Integrated WhatsApp** for alerts and coordination.
11. **Delivered** a **secure architecture**: **Next**.js, **TailwindCSS**, **NestJS**, **Prisma**, **MySQL**, **Docker**, **NGINX** on **Debian**; **Auth0 2FA**, CSRF, input **sanitization**, and **rate limiting**.
12. **Fully dockerized** the system with **automated backups** on a self-managed **Linux** environment.

#### b) Public Web Verification Portal - Frontend & Backend
1. **Public extension** of the **Institutional Platform** for **Complex Events**, **providing secure document verification** for **national** and **international organizations**.
2. Verifies reports via **CV + CRC validation** (**HMAC-SHA256**) and issues **10**-**minute JWT view grants** (**HS256**) with **server-controlled**, **time**-**limited access**.
3. **Anti**-**exfiltration controls**: **disables copy/paste**, **print**, and **captures**; **adds recipient watermark overlay**.
4. Renders **TipTap JSON** to **HTML with justified text** and institutional formatting.
5. Signed push **API** with **HMAC**, **idempotency keys**, **clock-skew validation**, and **SHA-256** file integrity checks.
6. Stack: **React** (**Vite**), **TypeScript**, **Tailwind**, **NestJS**, **Prisma**, **MariaDB**, **Docker**/**Compose**, **NGINX**, **Helmet**/**CORS**.

#### c) Ticketing System - Frontend & Backend
1. Internal **IT ticketing** platform in **PHP + MySQL** with **Google SSO**.
2. Incident intake, assignment, status tracking, and audit trail.
3. Streamlined maintenance **workflows** with **reliable**, **searchable history**.

### 2. VirtuaState - Frontend (May 2022 - Jul 2022)
1. Built a responsive portfolio site for a **VR/AR studio** (**HTML5**/CSS/**JS**, **mobile**-**first**), implementing **SEO** and **performance** optimizations to improve **visibility** and **load speed**. Live: www.virtuastate.net

## Education:

1. **Higher Degree in Programming - Teclab (Aug 2022 - Aug 2024)**
   **Subjects**: **Programming Logic**, **SQL** Databases, Web Development (**JavaScript**, **PHP**), **UX**, **AWS** Practitioner, Project Management, **Mobile** Development (**Java**), Configuration **Management**, **Web Integrations**, Information **Systems Design**, **Interface Development**, **Time** & **Work Organization**, **People** Management, and **Decision**-**Making** & **Problem Solving**.

2. **Frontend - Backend - CoderHouse (Jan 2022 - Mar 2023)**
   Delivered all projects on time using **HTML5**, **EJS**, **CSS**, **SASS**, **React**, **Node.js**, **MongoDB**, **Express**, and **GraphQL**, as seen at **https://react-e-commerce-j-sanso.vercel.app**