

# AGUSTIN ARIAS

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📍 Buenos Aires, Argentina

## PROFESSIONAL SUMMARY

Senior AI Architect & Applied Mathematician (UBA graduate) specializing in high-density agentic orchestration (LangGraph, PydanticAI) and autonomous reasoning loops. Expert in scaling RAG architectures for 2GB+ monolithic systems and implementing MCPs for enterprise-grade tool integration. Proven track record of accelerating migration velocity by 10x through mathematical optimization and self-healing multi-agent pipelines.

## EXPERIENCE

<b>Senior Devex Architect &amp; AI Lead</b>   Python, LangGraph, and Graph Theory algorithms. <i>La Nacion</i>	Oct. 2025 – Present Buenos Aires, Argentina
<ul style="list-style-type: none"><li>Architectural Intelligence: Designed and implemented a TDA-based (Topological Data Analysis) engine to map code dependencies in a 2GB monolithic codebase, accelerating migration velocity by 10x.</li><li>Agentic Orchestration: Built multi-agent systems using LangGraph and PydanticAI to automate complex engineering workflows, including self-healing documentation pipelines across 200+ repositories.</li><li>Modernization Leadership: Successfully leading the architectural transition of massive legacy systems into a modular, maintainable ecosystem using Applied Mathematics and AI.</li></ul>	
<b>Senior AI Engineer</b>   Python, PySpark, Kafka, LangChain <i>Remitz</i>	(1yr) Oct. 2024 – Oct. 2025 Remote
<ul style="list-style-type: none"><li>Scalable Architecture: Engineered and optimized large-scale ETL pipelines using PySpark and Kafka Streams to process complex medical datasets (EDI, HL7, CSV), significantly reducing ingestion latency.</li><li>LLM-Powered Automation: Designed and deployed NLP systems leveraging GPT to automate medical claims analysis, transforming unstructured billing data into actionable insights and increasing processing throughput.</li><li>Security &amp; Compliance: Architected secure data handling protocols ensuring full HIPAA compliance, implementing OAuth 2.0 and SFTP integrations for privacy-preserving AI workflows.</li></ul>	
<b>Machine Learning Engineer</b>   Python, Pytorch, Tensorflow, Pyspark, SparkSQL <i>Revelen.ai</i>	(1yr 4mo) Jul. 2023 – Oct. 2024 Buenos Aires, Argentina
<ul style="list-style-type: none"><li>Proficiently trained deep learning models in the field of computer vision, specializing in tasks such as instance segmentation, classification, and pattern recognition.</li><li>Integrated transformer models from Hugging Face for advanced generative AI and content protection solutions.</li><li>Executed data visualization and annotation processes through the utilization of a premium labeling tool, like Labelbox.</li><li>Integrated LangChain and LlamaIndex to develop scalable AI applications, enhancing conversational AI capabilities.</li><li>Leveraged Pinecone for efficient vector search and retrieval, improving the performance of semantic search applications.</li><li>Hands-on experience with transformer models, including GPT, and fine-tuning them for specific use cases.</li></ul>	
<b>Machine Learning Engineer</b>   Python, TensorFlow, Scikit-learn, PyTorch, Airflow <i>Vairix - Nearshore Software Development Boutique</i>	(1yr 8 mo) Dec. 2021 – Jul. 2023 Montevideo, Uruguay
<ul style="list-style-type: none"><li>Designed and implemented generative AI pipelines for US-based clients, including applications in synthetic content creation and advanced analytics.</li><li>Developed and deployed machine learning models using TensorFlow and PyTorch, improving data-driven decision-making for clients.</li><li>Utilized AWS and Google Cloud platforms for scalable model deployment and distributed training.</li></ul>	

## EDUCATION

<b>Master's in Mathematics</b> <i>University of Buenos Aires (UBA)</i>	Buenos Aires, Argentina Aug. 2019 – Dec. 2024
<b>Mechanical Engineering</b> <i>Instituto Tecnológico de Buenos Aires (ITBA)</i>	Buenos Aires, Argentina Jan. 2016 – Dec. 2018

## TECHNICAL SKILLS

<b>Agentic Architectures &amp; Autonomous Orchestration:</b> Knowledge Graphs, LangGraph, PydanticAI, Multi-Agent Orchestration, RAG Architectures, Vertex AI.
<b>Backend &amp; Languages:</b> Python (NumPy, Pandas, Scikit-learn), .NET (Roslyn API), C#, FastAPI, Pydantic.
<b>Mathematics:</b> Topological Data Analysis (TDA), Graph Theory, Optimization, Statistical Modeling.
<b>Infrastructure &amp; Cloud:</b> AWS, Azure, GCP, Docker, Kafka, PySpark, Vector Databases (Pinecone, pgvector).