Luis Edmundo Brena Pantoja

Baltimore, MD   Email: lbrenap1@jhu.edu   Phone: +1 (667) 3781725

GitHub   LinkedIn   Portfolio

Work Experience

Graduate Research Assistant   April 2025 – Present
AI Institute, Johns Hopkins University — Baltimore, MD

- Built an end-to-end fine-tuning pipeline for legal document drafting and logical validation using Hugging Face Transformers, AWS SageMaker, and PyTorch; improved information retrieval accuracy by 20%.
- Redesigned the span-relation UI in Label Studio and updated annotation guidelines using React to annotate 40 U.S. Corporate Tax cases for argument mining tasks; increased inter-annotator agreement by 15%.
- Authored a relation-labeled argumentation scheme for structured reasoning generation, enabling better dissection and structuring of logical arguments; used for training and fine-tuning retrieval models.

Event Technology & Operations Manager   July 2024 – May 2025
Peabody Institute — Baltimore, MD

- Applied Lean techniques to optimize inventory flow; cut swag items' days inventory outstanding by 30%.
- Coordinated over 30 large-scale academic, musical, and corporate events for students, faculty, and performers; introduced standardized planning templates and CAD layouts to streamline resource forecasting. These improvements reduced required labor hours by over 30% and decreased reliance on temporary hires by 15%.

Engineering Intern   September 2023 – December 2023
Intralox — Baltimore, MD

- Created an AI ideation pipeline that converted market-need briefs into concept descriptions and visual mockups (using OpenAI API + image generation), integrating feedback loops from clients, internal stakeholders, and market trends; generated over 100 new product and business ideas.

Senior Manager, Operations & Digital Transformation   August 2018 – August 2023
CHC Hotels — Huancayo, Peru

- Led a 24-person cross-functional team (engineering, operations, administrative) to implement dynamic pricing and automation, increasing RevPAR by 50% and guest satisfaction by 20%.
- Oversaw regional operations in 2020; secured a $20M+ bid, proposed the first hospitality standard in the country (later partially adopted by the Department of Health), resulting in 100% revenue growth for the year.
- Deployed Oracle Micros POS and Clock PMS (investment of over $100,000); standardized SOPs; reduced operational costs by 20%.
- Managed $1.2M in renovations and digital transformation initiatives; increased net income by over 20% YoY, resulting in a cumulative gain of more than $7M across four years.
- Developed an inventory management system using Rails in 2019 that improved turnover ratio by 5%, saving over $25,000 annually.

Founder & Product Lead   October 2018 – August 2023
Grupo Oka (Specialty Food Retail) — Huancayo, Peru

- Scaled from a single outlet to three stores, achieving $300,000 in annual revenue; oversaw product design, branding, and store operations.
- Led construction, architectural, and legal teams to meet regulatory requirements; developed a marketing strategy that positioned the brand among top-of-mind specialty food stores in Huancayo.

Software Engineer   December 2017 – August 2018
Relif Store — Lima, Peru

- Developed a Rails-based platform for clothing retail and inventory management, streamlining order processing and stock tracking.

Data Science Intern   July 2017 – August 2017
Visual3D Analytics — London, UK

- Designed and deployed over 30 dashboards in MicroStrategy, incorporating data modeling and building pipelines to transform raw data into visual insights for 3 clients during my tenure.

Projects

Legal Argument Generation — Retrieval Model (IR & Argument Mining)

- Designed and built retrieval components using U.S. Tax Court data (Python, PyTorch, Hugging Face Transformers), improving retrieval accuracy by 20%.

STM32 + CCA02M2 — Beam-forming Audio Capture & Processing

- Developed an embedded prototype in C/C++ on STM32 with the CCA02M2 board to capture audio and perform beam-forming, achieving a working proof of concept.

Label Studio Fork — New Text Annotation Features using React

- Added span-relation UI improvements to enhance annotation quality; raised inter-annotator agreement by 15% in lab workflows.

"Nmbr9" Game + Reinforcement Learning Algorithm

- Built game logic and user interface with Pygame; implemented a finetuned actor-critic algorithm with safety constraints; defined rules, reward shaping, and evaluation metrics.

AI Pipeline for Design Brainstorming for Intralox

- Created a human-in-the-loop AI pipeline to generate over 100 novel design proposals.

E-commerce Website & Inventory System for Relif Store

- Developed a Rails-based platform for clothing retail and inventory management, streamlining order processing and stock tracking.

Education

Johns Hopkins University — M.S., Engineering Management (ECE concentration)   2023–2025
Universidad de Lima — B.Eng., Industrial Engineering   2013–2018
ESAN Business School — Graduate Program, Corporate Law   2016-2017

Skills

Programming: Python, C++, C, Ruby, JS
ML/AI: PyTorch, TensorFlow, Hugging Face Transformers, AWS SageMaker, Azure, PyTorch
Frameworks: Flask, Django, React, Rails
Data: PostgreSQL, SQLite, AWS S3, Tableau, MongoDB
Embedded/Hardware: STM32, CCA02M2, ROS2
Tools: SolidWorks, MS Visio, Figma, Excel
Languages: English (fluent), Spanish (fluent)

Awards

Corporate Governance Essay Contest — Universidad de Lima (2017)
Hospitality Outstanding Operations Prize — El Tambo Municipality, Peru (2022)

Certifications

Advanced Certificate for Executives in Management, Innovation, and Technology — MIT Sloan (2018-2019)
SOLIDWORKS Essentials — Dassault Systèmes (2016)
Web Applications Using ASP.NET and MS SQL Server - Tecsup (2013)