



Luke Acosta

Vice President, Data Scientist Lead

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SUMMARY

Vice President and Data Scientist Lead with eight years of applied experience delivering machine learning, **natural language processing**, and large language model solutions across financial services operations, analytics, and controls. Advanced computer science training supports hands-on leadership across Amazon Bedrock, Cortex Analyst, Amazon SageMaker, Databricks, Python, PyTorch, pandas, NumPy, and scikit-learn. Leads production programs spanning **retrieval-augmented generation**, semantic search, **content extraction**, question answering, summarization, recommendations, and agentic workflows. Builds governed APIs, pipelines, evaluation frameworks, and **machine learning operations** practices that address accuracy, faithfulness, robustness, latency, cost, safety, and rollback readiness. Trusted by senior leaders, engineers, product teams, risk partners, and commercial banking stakeholders; brings practical judgment, care for users, and enthusiasm for building reliable capabilities that improve service, efficiency, planning, and controls.

EXPERIENCE

Vice President, Data Scientist Lead

HarborPoint Financial Group 📅 September 2023 - Present 📍 Denver, CO

Lead a nine-person data science and applied research practice delivering governed **generative artificial intelligence** capabilities through Amazon Bedrock and Cortex Analyst for commercial banking planning, service, and control workflows.

- Led Bedrock and Cortex Analyst programs for commercial banking planning, service, and control workflows.
- Rolled out retrieval-augmented **question answering** across policy content using embeddings, vector search, and citations.
- Established evaluation gates for accuracy, faithfulness, robustness, latency, cost, **red-teaming**, and **safety checks**.
- Partnered with engineering on FastAPI services, pipelines, containers, testing, CI/CD, and operational runbooks.
- Mentored five data scientists on **prompt engineering**, tool use, **structured outputs**, reasoning, and responsible AI.

Senior Data Scientist

Blue Ridge Capital Markets 📅 January 2021 - August 2023 📍 Charlotte, NC

Owned machine learning and natural language processing initiatives supporting fixed-income research, portfolio reporting, and service operations across fourteen internal business functions.

- Built Bedrock extraction services for obligations, dates, and risk language across 1.2 million records.
- Designed Python retrieval workflows with pandas, NumPy, **scikit-learn**, indexing, and **vector search**.
- Implemented **prompt templates**, model routing, **tool use**, and structured JSON outputs for internal APIs.
- Created SageMaker **experiment tracking**, **model registry**, monitoring, drift review, incidents, and rollback procedures.
- Presented model tradeoffs, risks, latency, cost, and results to investment, engineering, and compliance leaders.

Data Scientist

Crescent Peak Analytics 📅 July 2019 - December 2020 📍 New York, NY

Delivered supervised machine learning and **natural language processing** solutions for asset-management analytics, document intelligence, reporting applications, and client-facing research initiatives.

- Developed **Python** pipelines for transaction cleansing, document parsing, embeddings, and indexed retrieval corpora.

STRENGTHS

- ♥️ **Governed AI Delivery**
Built release gates around safety, faithfulness, cost, and access controls; risk partners became regular design collaborators.
- 🔧 **Research With Purpose**
Turned papers on prompting and agents into usable experiments; colleagues sought practical guidance during design reviews.
- 🗨️ **Clear Stakeholder Translation**
Converted model tradeoffs into plain business choices for banking leaders, helping teams agree on priorities and risks.
- 👥 **Hands-On Leadership**
Led a nine-person practice while staying close to code, architecture, reviews, and production support when delivery mattered.
- ⚙️ **Calm Production Judgment**
Used monitoring, incident plans, and rollback paths during releases; engineering partners valued steady decisions under pressure.

SKILLS

Generative AI

Large Language Models

Natural Language Processing

Prompt Engineering

Retrieval-Augmented Generation

Agentic Workflows

Content Extraction

<u>Semantic Search</u>	
<u>Question Answering</u>	
<u>Summarization</u>	<u>Recommendations</u>
<u>Evaluation Methods</u>	
<u>Amazon Bedrock</u>	<u>Cortex Analyst</u>
<u>Machine Learning Operations</u>	

LANGUAGES

English	Native
Spanish	Intermediate

MY CAREER



- Vice President, Data Scientist Lead at HarborPoint Financial Group (3 Years)
- Senior Data Scientist at Blue Ridge Capital Markets (2.6 Years)
- Data Scientist at Crescent Peak Analytics (1.4 Years)
- Machine Learning Associate at LatticeWorks Solutions (10 Months)

- Compared **PyTorch**, **TensorFlow**, pandas, NumPy, and scikit-learn approaches against analyst-labeled evaluation sets.
- Exposed predictions through tested APIs and scheduled batch processes for reporting applications.
- Introduced evaluation notebooks measuring precision, recall, **faithfulness**, **latency**, and error categories for stakeholders.
- Studied research on prompting, fine-tuning, retrieval, and agent design; converted findings into practical experiments.

Machine Learning Associate

LatticeWorks Solutions 📅 August 2018 - June 2019 📍 Boston, MA

- Supported supervised delivery of early machine learning and natural language processing engagements for **financial services** clients under senior data scientist guidance.
- Prepared account and market datasets with SQL, Python, **pandas**, and **NumPy** validation routines.
 - Built scikit-learn classifiers and similarity searches against curated samples for nontechnical client reviewers.
 - Contributed reusable preprocessing modules, **Git** workflows, unit tests, and **continuous integration** checks.
 - Tested chunking, **embeddings**, retrieval thresholds, and source links within a controlled vector-index experiment.
 - Presented findings, risks, and next steps in concise readouts for project and engineering leaders.

PROJECTS

Governed Commercial Banking Search 📅 2025

Built a governed search and question-answering capability that connected policy content with clear citations, access boundaries, and measurable evaluation criteria.

Agentic Research Assistant 📅 2024

Created a practical agent workflow using structured outputs, tool use, and multi-step reasoning for research and recommendation tasks.

LEADERSHIP & AWARDS

- Responsible AI Implementation Award, HarborPoint Financial Group, 2025
- Applied Analytics Innovation Award, Blue Ridge Capital Markets, 2022
- Graduate Research Fellowship, Georgia Institute of Technology, 2017

EDUCATION

Master of Science in Computer Science

Georgia Institute of Technology 🎓 GPA: 4.0 📅 2018 📍 Atlanta, GA

Coursework: Machine Learning, Natural Language Processing, Distributed Systems, Data Mining

Bachelor of Science in Statistics

University of Massachusetts Amherst 🎓 GPA: 3.8 📅 2016 📍 Amherst, MA

Coursework: Statistical Modeling, Probability, Regression Analysis, Experimental Design

CERTIFICATIONS

- AWS Certified Machine Learning - Specialty 📅 2024
- Databricks Generative AI Fundamentals 📅 2025
- Snowflake Hands-On Essentials: Cortex 📅 2025

TECHNICAL SKILLS

- **Generative AI Platforms:** Amazon Bedrock, Cortex Analyst, Databricks
- **Machine Learning Cloud:** Amazon SageMaker, AWS, Snowflake
- **Programming Languages:** Python, SQL, JSON
- **ML Frameworks:** PyTorch, TensorFlow, scikit-learn

- **Data Science Libraries:** pandas, NumPy, SciPy
- **Retrieval Systems:** Embeddings, vector search, indexing
- **LLM Methods:** Prompt engineering, fine-tuning, agents
- **Evaluation Methods:** Accuracy, faithfulness, robustness
- **Software Interfaces:** FastAPI, APIs, structured outputs
- **Data Pipelines:** Batch jobs, preprocessing, ETL
- **Engineering Practices:** Git, testing, code review
- **Delivery Automation:** CI/CD, containers, Kubernetes
- **MLOps Controls:** Model registry, drift monitoring, rollback
- **Safety Controls:** Guardrails, red-teaming, safety checks
- **Financial Domains:** Commercial banking, markets, asset management

PROFESSIONAL AFFILIATIONS

- Mentor, Financial Services Data Science Fellowship, September 2024 - Present
- Co-lead, Responsible AI Practitioners Forum, September 2023 - Present
- Reviewer, Internal Machine Learning Standards Council, January 2022 - Present

ADDITIONAL INFORMATION

Work Status : Authorized to work in United States. No sponsorship required.

REFERENCES

AVAILABLE ON REQUEST