

# Bruno Guzzo

Machine Learning Engineer — Cloud Architect

## Work Experience

### AI Specialist (Mid-Senior Consultant)

January 2025 – Present

*Go Reply, Turin*

- Coordinated a multi-company effort to gather customer requirements and design a cloud-native **research-oriented healthcare platform**, enabling cloud-centralized and rapid clinical and **genomic data retrieval**.
- Directed a cross-functional team of developers in delivering a **B2C cloud-native mobile application** enabling after-sales support, digital documentation access via Gen-AI chat-bot and seamless multi-cloud **CRM integration**.
- Designed and implemented a scalable **legal treaties search engine and RAG solution** using **Vertex AI** and **BigQuery** with a highly efficient and concurrent data ingestion pipeline, enabling insight generation and optimization of customer workflow. Improved data processing speed by **94%**.
- Advised clients on **AI and agent-based system** integration, facilitating the adoption of Google Cloud enterprise ecosystem via **custom-tailored RFP solutions** to improve critical business processes. Increased client adoption rate of Vertex AI by **30%**.
- Managed **strategic client engagement** within the global development industry, coordinating **multi-project cloud advisory and resource allocation** that mobilized **20%** of the BU workforce and drove **30%** of unit profitability.
- Mentored junior engineers, **promoted agile best practices** through knowledge-sharing events, and **coordinated sprint reviews** and retrospectives to accelerate team performance and continuous improvement. Successfully decreased code-review time by **60%**.

### Cloud Engineer (Consultant)

June 2022 – December 2024

*Go Reply, Turin*

- Contributed to the development of a digital platform for the **agriculture and food sector**, enhancing **data collection and analytics** capabilities to support evidence-based decision-making on sustainable farming and antimicrobial resistance, while leading its **migration to Google Cloud** for scalability and performance. Successfully reduced infrastructural costs by **30%**.
- Participated in the implementation and deployment of a **digital learning solution** in the **education industry**, delivering scalable and cloud-based features aligned with client innovation goals.
- Modernized a large-scale **telecommunications cybersecurity platform**, improving scalability and enhancing user experience through **architectural refactoring**, cloud integration, and automation to strengthen **service reliability** across mobile and fixed networks.

## Personal & Academic Projects

### MSc Thesis: Anomaly Detection with Deep Autoencoders

- Investigated a semi-supervised anomaly detection pipeline using a novel Autoencoder (AE-SAD) architecture, specifically addressing the challenge of severe class imbalance during training.
- Demonstrated that applying advanced under-sampling techniques can significantly boost detection accuracy (AUC) in complex many-vs-many scenarios while reducing training time by up to two orders of magnitude.

### Transformer-GNN for Link Prediction

- Built a scalable data pipeline to create a large-scale graph dataset from Wikipedia using web crawling and NLP.
- Trained and evaluated multiple Graph Attention Network (GAT) models on the custom dataset, analyzing graph metrics and model performance.

### Anomaly Transformer Analysis

- Implemented a novel time-series anomaly detection model using the Anomaly-Transformer architecture, leveraged self-attention mechanisms to identify anomalies within the Mars Science Laboratory (MSL) dataset.
- Engineered a robust machine learning pipeline encompassing model training and rigorous evaluation. Optimized model performance through extensive hyper-parameter tuning via grid search.

### Italian LLaMA 3 Fine-Tuning and Evaluation

- Enhanced the “LLaMAntino-3” model by fine-tuning it on the Italian Wikipedia, resulting in significantly improved language modeling capabilities, as evidenced by reduced perplexity.
- Developed a RAG-based chatbot using the fine-tuned model to answer questions about Italian literature, leveraging a custom corpus of documents.

## Education

### MSc, AI & ML Engineering

*UNICAL, Rende (CS), Italy*

Oct 2022 – July 2025

### BSc, Computer Engineering

*UNICAL, Rende (CS), Italy*

Oct 2018 – June 2022



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## Technical Skills

### Google Cloud (*Advanced*)

- Compute:** Cloud Run, App Engine, Cloud Functions, Compute Engine
- AI/ML:** Gemini, Vertex AI, Agent Builder
- Data:** BigQuery, Cloud SQL, Firestore, and Firebase Realtime Database, Cloud Storage
- Infra:** VPC, Load Balancer, IAM, Cloud Armor, Cloud DNS, Cloud CDN, Cloud Task, Cloud Pub/Sub

### AI & Machine Learning (*Academic*)

- Frameworks:** PyTorch, PyTorch Geometric, Langchain, Hugging Face Transformers, PEFT (Parameter-Efficient Fine-Tuning), TRL (Transformer Reinforcement Learning), Unisloth
- Libraries:** Pandas, NumPy, Scikit-learn, SciPy, NLTK, Sentence-Transformers, FAISS (Vector Database), BitsAndBytes (for Quantization)
- Concepts:** LLM, RAG, NLP, Fine-Tuning (QLoRA), Vector Databases, Embeddings, Anomaly Detection, Time-Series Analysis, Reinforcement Learning, GNNs, CNNs, Autoencoder, Transformer, GPT, BERT, Hyperparameter Tuning, Model Evaluation

### DevOps (*Advanced*)

- IaC:** Terraform, Fabric
- CI/CD:** Cloud Build, GitLab CI, GitHub Actions, Artifact Registry
- Containers:** Docker
- Others:** Linux, Git, A/B Testing

### Software Development (*Advanced*)

- Languages:** Python, Java, C, JavaScript, Typescript, Dart
- Frameworks:** Spring Boot, Hibernate, JPA, Flask, Django, SQLAlchemy, Angular, React, Flutter
- Databases:** PostgreSQL, MySQL, NoSQL
- Others:** Agile, Scrum, Jira, Sprint Planning, Cloud-native

## Languages

- Italian:** Native
- English:** B2, Cambridge certified