

Dario Di Palma

[LinkedIn](#) | [Online Portfolio](#) | [Google Scholar](#)

ABOUT ME: I am a final-year Ph.D. student set to graduate in January 2026. My research focuses on LLMs and RS, with recent work accepted at RecSys introducing a novel approach to using LLMs for enhanced recommendation. I am also working on interpretability techniques for sentiment analysis. I am seeking a 3- to 6-month internship and I am open to relocation, with a preference for EU, UK, USA, Canada, Japan, Singapore, Shanghai, and Taiwan. I am eager to apply my skills in a forward-thinking team dedicated to advancing AI.

EDUCATION

PhD. Computer Engineering in Recommender Systems and Large Language Models

Bari, Italy | Jan. 2023 – Jan. 2026

Polytechnic University of Bari

Research Areas: Recommender Systems, Conversational Agents, Large Language Models, Multi-Objective Evaluation.

About me: As a PhD student in Recommender Systems, my goal is to advance our understanding and capabilities in this field. I am investigating two main areas: first, using LLMs as a foundation and enhancing them with personalized recommendations; and second, leveraging LLMs to support and augment the tasks of traditional Recommender Systems. My work extends beyond classical metrics like accuracy to include evaluations based on popularity bias, diversity, coverage, and other beyond-accuracy metrics, aiming to develop more robust and effective Recommender Systems.

MasterZ Blockchain & Digital Assets

Online | Oct. 2022 – March 2023

MasterZ provides a business-oriented educational training program centred around Blockchain technology and the complexities of Digital Assets.

M.S in Computer Engineering

Polytechnic University of Bari, Magna cum laude

Bari, Italy | Sept. 2020 – Oct. 2022

M.S. thesis: Point-of-Interest Recommendation through GNNs on Heterogeneous Graphs.

B.S. in Computer Engineering

Polytechnic University of Bari

Bari, Italy | Oct. 2018 – Sept. 2020

B.S. thesis: Service Composition and Negotiation in a Semantic-Based Blockchain Platform.

WORK EXPERIENCE

Polytechnic University of Bari

Teaching Assistant

Bari, Italy | March 2023 – Present

Preparing comprehensive Python notebooks hands-on to complement theory lessons and teaching during practice lessons for the course of “Deep Learning” for M.S. in Computer Engineering.

Polytechnic University of Bari

Teaching Assistant

Bari, Italy | Sept. 2022 – Present

Preparing comprehensive Python notebooks hands-on to complement theory lessons and teaching during practice lessons for the course of “Information Systems” for M.S. in Management Engineering.

Universidad Autónoma de Madrid

M.S. Research Internship

Madrid, Spain | April 2022 – Oct. 2022

Led the design and development of a cutting-edge Point-Of-Interest Recommender System tailored for the tourist sector, utilizing technologies such as Keras, NetworkX, and state-of-the-art Graph Neural Networks (GNNs), specifically Heterogeneous Graphs.

Leonardo S.p.A

Teacher

Online | Nov. 2021 – Nov. 2021

Delivered theoretical lectures on Lean Production and Smart Factory concepts, providing students with a solid understanding of these essential principles.

Polytechnic University of Bari

Research Assistant

Bari, Italy | Dec. 2020 – Oct. 2021

- Helped in research focused on Knowledge Representation and Reasoning.
- Designed and implemented a unique approach to Knowledge Graphs for creating a StarCraft II Bot.
- Engaged in Blockchain projects, specifically with Hyperledger Sawtooth, demonstrating expertise in distributed ledger technology and its practical applications.

PUBLICATIONS

Evaluating ChatGPT as a Recommender System: A Rigorous Approach [↗](#) (Currently Under Review)

Python, Recommender Systems, Large Language Models, Prompt Engineering

- A robust evaluation pipeline beyond accuracy metrics is proposed to assess ChatGPT's capabilities as a recommender system, including post-processing for hallucinations, duplications, and out-of-domain recommendations.
- The study examines ChatGPT-3.5 and ChatGPT-4 in zero-shot recommendation tasks using a role-playing prompt across three settings: Top-N recommendation cold-start recommendation, and re-ranking, in the domains of movies, music, and books.
- Experiments show that ChatGPT surpasses baselines in accuracy for book recommendations and excels in re-ranking and cold-start scenarios while maintaining reasonable beyond-accuracy metrics.

[IIR'24](#) | Beyond Words: Can ChatGPT support state-of-the-art Recommender Systems? (Just Accepted – will be published on mid-September)

Python, Recommender Systems, Large Language Models, Prompt Engineering

- This study examines the performance of ChatGPT-3.5 and ChatGPT-4 to re-rank recommendations across three domains under zero-shot conditions.
- The findings indicate that ChatGPT excels in re-ranking tasks and delivering high-quality recommendations.
- The study also compares the similarity between ChatGPT's recommendations and those from other recommendation systems, providing insights into ChatGPT's positioning within the recommendation systems landscape.

[RecSys'23](#) | Broadening the Scope: Evaluating the Potential of Recommender Systems beyond prioritizing Accuracy [↗](#)

Python, Recommender Systems, Pareto Frontier

- This research introduces a novel multi-objective evaluation framework aiming to holistically assess RS performance.
- Simultaneously considering diverse model configurations from different viewpoints, this approach challenges the dominance of single metrics and sheds light on limitations of accuracy-centric evaluation.
- The application of Quality Indicators (QI) from Multi-Objective Optimization research to RSs offers a balanced evaluation method that brings multiple evaluation dimensions into play, potentially reshaping the evaluation landscape within the RecSys research community.

RecSys'23 | Retrieval-augmented Recommender System: Enhancing Recommender Systems with Large Language Models [↗](#)

Python, Large Language Models, Recommender Systems

- The work introduces a novel concept, Retrieval-augmented Recommender Systems, which synergizes Large Language Models (LLMs) and RSs. By fusing retrieval-based and generation-based models, this approach harnesses the contextual prowess of LLMs to empower RSs in delivering relevant recommendations even in challenging data scenarios.
- The investigation begins with initial experiments to assess the capabilities of Large Language Models (LLMs). Subsequently, it formulates hypotheses regarding different approaches to integrating LLMs into the Recommender Systems (RSs).

PROJECTS

RITA Copilot [↗](#)

Large Language Model (LLM), Google Cloud, Azure Cloud, Eclipse KUKSA

RITA Copilot is a Road Information and Travel Assistant AI that integrates various services for voice recognition, natural language processing, and text-to-speech. It acts as a copilot to assist drivers by providing real-time traffic updates, suggesting optimal routes, locating nearby services, offering mechanical advice, and facilitating emergency assistance when needed.

RecMOE [↗](#)

Recommender Systems, Pareto Frontier, Evaluation

A library for computing Pareto fronts and evaluating them with Quality Indicators (QIs) for Recommender Systems. Officially released following the acceptance of the paper titled 'Broadening the Scope: Evaluating the Potential of Recommender Systems Beyond Prioritizing Accuracy.'

Fairness in a Student Performance Data Set [↗](#)

Machine Learning, Sklearn, AIF360

The project uses Logistic Regression, Random Forest, and Support Vector Machine as base models to investigate Bias and Fairness in Machine Learning. The project aims to explore advanced techniques for enhancing fairness in machine learning models, focusing on novel approaches to achieve fairness in classification tasks.

Oil Spills Semantic Segmentation [↗](#)

Deep Learning, PyTorch, Transfer Learning, Data Augmentation

Employing various Deep Convolutional Neural Networks on Synthetic Aperture Radar (SAR) images for the purpose of Oil Spill detection. Multiple models were trained, incorporating techniques such as data augmentation and transfer learning. Ultimately, the most effective model for segmentation, identified as DeepLabV3+ (ResNet101), emerged from these efforts.

Restaurant Recommendation System [↗](#)

Machine Learning, Big Data Analysis

Leveraging the capabilities of Spark and MLlib, we conducted an array of data analysis tasks on the "Restaurants and Consumers" dataset curated by UCI ML. These tasks encompass a spectrum of analyses, ranging from fundamental statistical examinations to intricate business-economic analyses. The culmination of our efforts involves the application of Machine Learning techniques to construct a recommendation engine, utilizing the Collaborative Filtering algorithm, specifically the alternating least squares (ALS) algorithm.

Go-Interpreter-In-Python [↗](#)

Python, Go, Interpreter

A Go Interpreter written in Python using Lark a modern parsing library for Python.

Swift-Interpreter-in-GO [↗](#)

Go, Swift, Interpreter

A swift interpreter written in Go using the Pratt Parsing technique.

NCP The Game [↗](#)

Unity, C#, 2D Sprites

NCP is a one-touch Android game where players guide a Pig through floating islands, avoiding deadly bombs to survive. With minimalistic graphics and quick rounds, players tap to control the character's jumps and navigate the challenging landscape.

Remote Car Key Hack [↗](#)

Hardware Hacking, Electromagnetism

I have adapted an external 2.0 sound card by incorporating a 433 MHz RF transmission and reception module to serve both as a receiver and a transmitter. This modification is aimed at capturing the remote signal of my car and replicating it to unlock the vehicle.

AWARDS AND VOLUNTEERING

Acceptance to ACM Europe Summer School on "HPC Computer Architectures for AI and Dedicated Applications"

Barcelona, Spain | 2024

Chosen as one of only 60 participants to attend the ACM Europe Summer School, focusing on high-performance computing architectures tailored for AI and specialized applications.

Acceptance to Generative Modeling Summer School

Eindhoven, Netherlands | 2024

Selected as one of only 200 participants worldwide to attend the Generative Modeling Summer School, focusing on advanced techniques in generative modeling and deep learning.

Winner of the Bosch Ideathon competition

Bari, Italy | 2023

With my team I worked to create a winning idea for an automotive competition, which got us into the [Bosch Connected Experience 2024](#) in Berlin. Furthermore, during the competition, we developed a functional [voice assistant](#) named [RITA](#) for automotive applications in just 30 hours.

ACM RecSys'23 Student Travel Grant

Singapore | 2023

Winner of the Gary Marsden Travel Awards to support students, early-career researchers in attending ACM SIGCHI conferences.

Student Volunteer

ACM RecSys | '23 and '24

On-site volunteer assisting with the setup and execution of necessary tasks during the conference, including AV support, managing the registration desk, arranging posters and demos, monitoring breaks, and more.

Treasurer and Active Volunteer

Erasmus Student Network Bari, Italy | 2019 – 2022

- Managed budgeting, financial reporting, and resource allocation as Treasurer, demonstrating strong financial acumen and attention to detail.
- Collaborated with cross-functional teams to organize events, fostering communication skills and adaptability.
- Coordinated fundraising initiatives, showcasing project management abilities and creativity.
- Facilitated workshops on financial literacy, honing effective communication and presentation skills.
- Contributed to strategic decision-making processes, underscoring your analytical thinking and problem-solving abilities.

