

Farzad Shami

1ST YEAR PHD STUDENT AT AALTO UNIVERSITY

Helsinki, Finland

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Education

PhD in Computer Engineering

AALTO UNIVERSITY (GIST LAB) ADVISORS: PROF. H. TENKANEN & N. VAN DE WEGHE

Helsinki, Finland

Jul. 2025 - Present

- **Research focus:** Multimodal Large Language Models (LLMs) for Geospatial Reasoning.
- **Project:** Geo-R2LLM – Knowledgeable and Interpretable multimodal Geographic LLMs Grounded with Reasoning and Retrieval funded under the CHIST-ERA transnational call 2023.

M.S. in Computer Engineering (GPA: 110/110)

UNIVERSITY OF PADOVA (UNIPD) ADVISORS: PROF. G. SILVELLO & S. MARCHESIN

Padova, Italy

Sep. 2022 - Mar. 2025

- **Grant:** Awarded a research grant (€5,000) for the project “LLM-based Fact Verification Pipeline for Knowledge Graphs”.
- **Thesis:** Knowledge Graph Fact Verification Through Retrieval-Augmented Generation (RAG) Using a Multi-Model Ensemble Approach.
- **Relevant Coursework:** Graph Databases (30L/30), Search Engines (30L/30), Geographic Information Systems (30/30), Distributed Systems (30/30), Machine Learning (27/30).

Publications

GROKE: Vision-Free Navigation Instruction Evaluation via Graph Reasoning on OSM.

arXiv

Farzad Shami, Subhrasankha Dey, Nico Van de Weghe, and Henrikki Tenkanen.

2026

From Single to Multi-Agent Reasoning: Advancing GeneGPT for Genomics QA.

ECIR

Kimia Abedini, Farzad Shami, and Gianmaria Silvello.

2026

Benchmarking Large Language Models for Knowledge Graph Validation.

EDBT

Farzad Shami*, Stefano Marchesin, and Gianmaria Silvello.

2026

Fact Verification in Knowledge Graphs Using LLMs.

SIGIR

Farzad Shami*, Stefano Marchesin, and Gianmaria Silvello.

2025

Doctrone: A Web-based Collaborative Annotation Tool for Ground Truth Creation in IR.

SIGIR

Ornella Irrera, Stefano Marchesin, Farzad Shami, and Gianmaria Silvello.

2025

SEUPD@CLEF: Team CLOSE on temporal persistence of IR systems' performance.

CLEF

Farzad Shami, Gianluca Antolini, Nicola Boscolo, Mirco Cazzaro, Marco Martinelli, Reza Safavi, Nicola Ferro.

2023

Professional Experience

University of Padova

Padova, Italy

RESEARCHER

Jul. 2024 - Jul. 2025

- Implemented and optimized a locally deployed ensemble of 4 LLMs (7B-9B parameters) for fact verification, processing 13,530 facts across three datasets with an average latency of 7 min per query.
- Developed a large-scale web data collection system for fact verification, crawling 54k Google search pages resulting in 2M crawled results, with 1.3M validated data meeting quality criteria for KG verification.
- Redesigned the *MetaTron* biomedical web platform dashboard by conducting statistical analysis of annotation patterns and user interactions, enabling data-driven insights for research collaboration effectiveness.

[ui!] - Urban Software Institute

Munich, Germany

SOFTWARE DEVELOPER | R&D

May. 2023 - Jun. 2024

- Explored and experimented with RAG models to create chatbots that seamlessly interacted with databases.
- Designed migration tools using Python and GraphQL to streamline the integration of legacy systems with modern APIs, resulting in a 30% reduction in development time.

Yektanet

SOFTWARE ENGINEER

Mar 2021 - Apr 2022

- Cooperation in developing a system to process more than 3k req/s to calculate market share.
- Research and development of algorithms centered around the sales of most products based on the analysis and collection of customer data.

Skills

Languages English (B2), Finnish/Italian (A1), Persian/Azerbaijani (Native).

Soft Skills Communication, Problem-solving, Teamwork, Time Management, Conflict Resolution, Creativity.

Programming Python, Go, Javascript.

Databases PostgreSQL (+PostGIS Extension), GraphDB (SPARQL).

Language Processing Transformers, Embeddings, Gen-AI tools, RAG (Multimodal Data Integration, Contextual Search).

Industry Experience Knowledge Graphs (Ontology), RESTful APIs, Microservices, Software Engineering Principles, Git, Docker, Django.

Academic Service

Talks GAIA Symposium (2025, Spotlight Talks)

Reviewing ICLR ES-Reasoning Workshop (2026), ACM SIGIR Demonstration Track (2026)

Organizing ACM SIGIR (2025, Student Volunteer)

Co-Advisor Syed Peerzada (Jan. 2026 – Present, MSc Thesis @ Aalto University)

Course Development Joint GeoAI Course (MSc level, TU Graz / Aalto , 2026), GIS Development Course (MSc level, Aalto , 2026),

“Location & AI – Deep Dive into Practical Solutions” course (Location Innovation Hub, 2025)

Teaching Assistant Data Structures (BSc, SRU University, 2019 – 2020), Advanced Programming (BSc, SRU University, 2019 – 2020)

Selected Awards Honors

2024 **1st Place**, Artificial Intelligence Hackathon - Unox S.p.A. and Amazon Web Services (AWS)

Italy

2014 **Bronze Certificate**, Sharif University student competitions