

Emmanouil (Manos) Chatzakis

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Education

Université Paris Cité

Paris, France

Ph.D. Computer Science

May 2025 - Sept. 2028 (Expected)

Thesis: Efficient Algorithms for Exact and Approximate Nearest Neighbor Search for Large High-dimensional Data Collections (Vector Similarity Search), supervised by Prof. Themis Palpanas.

EPFL

Lausanne, Switzerland

MSc. Computer Science. GPA 5.50/6.00

Sept. 2022 - April 2025

Thesis: Declarative Recall through Early Termination for Approximate Nearest Neighbor Search.

Endorsed for EPFL Master Thesis Prize.

University of Crete

Heraklion, Greece

BSc. Computer Science. GPA 9.43/10.00 (First-of-Class Honor, Valedictorian)

Sept. 2018 - July 2022

Thesis: Distributed Query Processing in Large Data Series Collections.

Experience

Google

Sunnyvale, CA, USA

Student Researcher

May 2025 – Sept. 2025

- Student researcher at the Systems Research Group (SRG) & AlloyDB team, focusing on filtered nearest neighbor search for high-dimensional vectors (C, C++, PostgreSQL).
- Supervised by Prof. Yannis Papakonstantinou, Dr. Fatma Ozcan, Dr. Helena Caminal, Mr. Viral Shah, and Mr. Itai Rosenblatt.

Commission of Atomic Energy (CEA)

Paris, France

Research Intern

Mar. 2024 – Aug. 2024

- Developed a scalable subsequence data series similarity search tool applicable for large seismic data collections (C, C++). The tool is currently used by CEA.
- Compared current State-of-the-Art methods for subsequence similarity search (C, C++).
- Processed and analyzed vast seismic data collections (Python, ObsPy).
- Supervised by Mr. Mikael Freire and Dr. Yoann Cano.

EPFL DIAS Laboratory (summer@EPFL)

Lausanne, Switzerland

Research Intern

July 2022 – Sept. 2022

- Created an enhanced semantic-rich join operator applicable for vector embeddings, offering more than 100x speedup compared to naive vector joins (C, C++).
- Evaluated various algorithms for string similarity joins (C, C++).
- Created benchmark datasets of word embeddings by harvesting Wikipedia text (C, C++, Python).
- Supervised by Dr. Viktor Sanca and Prof. Anastasia Ailamaki.

ICS-FORTH

Heraklion, Greece

Research Intern

Sept. 2019 – Sept. 2021

- Developed a tool for similarity-based browsing, operating on top of RDF knowledge graph embeddings (Java, SPARQL, JavaScript, HTML/CSS).
- Created a tool applicable to the digital preservation of historical monuments, by harvesting structured or unstructured monument data/metadata and storing them as SIPs (using METS and BagIt formats). The tool is currently used by Cultural Heritage Imaging (Java, PostgreSQL).
- Contributed to the creation and algorithmic extensions of a lightweight data visualization algorithm (Java).
- Supervised by Prof. Yannis Tzitzikas, Dr. Michalis Mountantonakis, and Mr. Yannis Marketakis.

Publications

1. **Manos Chatzakis**, Yannis Papakonstantinou, Themis Palpanas. DARTH: Declarative Recall through Early Termination for Approximate Nearest Neighbor Search, ACM SIGMOD 2026.
2. Viktor Sanca, **Manos Chatzakis**, Anastasia Ailamaki. Optimizing Context-Enhanced Relational Joins, IEEE ICDE 2024.
3. **Manos Chatzakis**, Panagiota Fatourou, Eleftherios Kosmas, Themis Palpanas, Botao Peng. Odyssey: A Journey in the Land of Distributed Data Series Similarity Search, PVLDB 16(5).
4. **Manos Chatzakis**, Michalis Mountantonakis, and Yannis Tzitzikas. RDFsim: Similarity-Based Browsing over DBpedia using Embeddings Information MDPI, Data and Metadata Management with Semantic Technologies, 2021.
5. Yannis Tzitzikas, Maria Papadaki and **Manos Chatzakis**. A Spiral-like Method to Place in the Space (and Interact with) too Many Values, IIIS 2021.

Awards

PhD Scholarship <i>Onassis Public Benefit Foundation</i> Distinguished scholarship awarded to 80 Greek students from various disciplines to support their doctoral studies.	July 2025
Graduate MSc. Scholarship <i>Onassis Public Benefit Foundation</i> Distinguished scholarship awarded to 60 Greek students to support their postgraduate studies.	July 2023
Graduate MSc. Scholarship <i>John S. Latsis Public Benefit Foundation</i> Distinguished scholarship awarded to 20 Greek students to support their postgraduate studies at international institutions.	July 2022
Elisavet Keramintzoy Award <i>University of Crete</i> Award granted to the top-of-the-class student graduating from the University of Crete.	July 2022
Distinguished Stelios Orfanoudakis Scholarship <i>ICS-FORTH</i> Distinguished yearly scholarship awarded to the top-of-the-class computer science students of the Computer Science Department of the University of Crete.	Sept. 2019, 2020, 2021
Xrisanthos and Anastasia Karidis Scholarship <i>University of Crete</i> Awarded to the University of Crete students who excelled in their High School exams.	June 2020

Skills

Programming: C, C++, Python, Java, Scala, Go, JavaScript
Frameworks: MPI, PyTorch, Spark, jQuery
DataBases: SQL, PL/SQL, SPARQL
Tools: Git, Make/CMake, Slurm, Maven, Gradle, Tomcat
Languages: English (Proficient), Greek (Native), French (Beginner)

Selected Projects

BioMON. BioMON is a few-shot meta-learning architecture that employs various classifiers as base learners, targeted for biomedical data collections, such as Tabula Muris and Swissprot (PyTorch), 2023.

ChatMGL. A GPT-based Large Language Model for Data Science questions gathered from courses of EPFL (PyTorch). ChatMGL is trained over a dataset of Data Science questions generated from LLMs and enhanced with information from other public datasets, 2023.

MovieRecommender. A distributed Data Analytics, Streaming, and Recommendation Engine (Collaborative Filtering), operating on a dataset containing movies and user ratings (Scala, Spark), 2023.

Multimodal Deep Learning for a Global dataset of COVID-19 Patients. An evaluation of different neural network architectures for classification over a massive COVID-19 dataset (PyTorch). The project was developed in collaboration with iGH Lab of EPFL, 2022.

Wikipedia Link Position and User Navigation. Understanding user behavior by exploiting the visual position of links in Wikipedia pages (Python), 2022

BioMedicEngine. A search engine utilizing a custom parameterized vector retrieval model, operating on a big collection of XML-based biomedical documents (Java), 2022.

KFCEngine. A complete 2D Game Engine (C++). The project also contains an example implementation of the classic Super Mario Bros game, 2022.

AlphaCompiler. A fully functional Compiler and Virtual Machine for Alpha programming language (JavaScript-like syntax), implemented from scratch (C, Lex, Yacc/Bison), 2021.

Professional Service

VLDB Shadow PC

VLDB 2026

Serving as a Shadow PC for VLDB 2026.

Boston, MA, USA

Sept. 2026

Students Supervised

1. Gayathiri Ravendirane (co-supervised with Prof. Themis Palpanas), BSc student, Université Paris-Saclay, May 2025-July 2025

Invited Talks

1. Invited talk at Systems Group at ETH, Zurich, Switzerland, October 2025 (scheduled)
2. Invited talk at Oracle Corporation, Redwood City, CA, USA, August 2025
3. Invited talk at Hersonissos High School, Heraklion, Greece, April 2025.

Extras

9th Heidelberg Laureate Forum (HLF)

Heidelberg Laureate Forum Foundation

Selected as one of the 100 early-stage (BSc-Postdoc) computer science researchers to participate in the 9th HLF.

Heidelberg, Germany

Sept. 2022

Seeds for the future Event

Huawei Technologies Co., Ltd

Invited to participate in Huawei's Seeds For The Future event, which focused on Cloud Computing, 5G, and AI. Designed and presented the wildfire protection idea "Artemis: An Innovative Crowdfunding Solution through Freemium Gaming for Preventing Future Wildfires!", which was selected as a top idea of the event.

References are available upon request.

Shenzhen, China (remote)

Nov. 2021

Updated: July 2025