

Manos Chatzakis

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Education

University of Paris Cité

Paris, France

Ph.D. Computer Science

April 2025 - Sept. 2028

Thesis: Efficient Algorithms for Exact and Approximate Nearest Neighbor Search for Large High-dimensional Data Collections

Supervisor: Prof. Themis Palpanas

EPFL

Lausanne, Switzerland

MSc. Computer Science. GPA 5.33/6.00

Sept. 2022 - March 2025

- Thesis: Declarative Recall through Early Termination for Approximate Nearest Neighbor Search. Supervised by Prof. Themis Palpanas (University of Paris Cité) and Prof. Yannis Papakonstantinou (Google Cloud and University of California San Diego).
- Research Project: Improving the complexity of Byzantine Vector Consensus with Leader-Based algorithms. Supervised by Dr. Jovan Komatovic and Prof. Rachid Guerraoui.

University of Crete

Heraklion, Greece

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

Sept. 2018 - July 2022

- Thesis: Distributed Query Processing in Large Data Series Collections, supervised by Prof. Panagiota Fatourou and Prof. Themis Palpanas.
- Teaching Assistant position for the Object Oriented Programming (Java) course, including lecturing, student supervision, and assignment design.

Experience

Commission of Atomic Energy (CEA)

Paris, France

Research Intern

Feb. 2024 – Aug. 2024

- Developed a scalable subsequence data series similarity search tool applicable for large seismic data collections (C, C++).
- 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 2024 – Sept. 2024

- Created an enhanced join operator applicable for vector embeddings, offering more than 100x speedup compared to naive vector joins, focusing on text embeddings (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**, Themis Palpanas, Yannis Papakonstantinou, Declarative Recall through Early Termination for Approximate Nearest Neighbor Search, Under Review, 2025.
2. **Manos Chatzakis**, Panagiota Fatourou, Eleftherios Kosmas, Themis Palpanas, Botao Peng. Distributed Data Series Similarity Search with Odyssey+, Under Review, 2025.
3. Viktor Sanca, **Manos Chatzakis**, Anastasia Ailamaki. Optimizing Context-Enhanced Relational Joins, IEEE ICDE 2024.
4. **Manos Chatzakis**, Panagiota Fatourou, Eleftherios Kosmas, Themis Palpanas, Botao Peng. Odyssey: A Journey in the Land of Distributed Data Series Similarity Search, VLDB 2023.
5. **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.
6. 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

Graduate Scholarship

July 2023

Onassis Public Benefit Foundation

Distinguished scholarship awarded to 60 Greek students to support their postgraduate studies at international institutions.

Graduate Scholarship

July 2022

John S. Latsis Public Benefit Foundation

Distinguished scholarship awarded to 20 Greek students to support their postgraduate studies at international institutions.

Elisavet Keramintzoy Award

July 2022

University of Crete

Award granted to the top-of-the-class student graduating from the University of Crete.

Distinguished Stelios Orfanoudakis Scholarship

Sept. 2019,2020,2021

ICS-FORTH

Distinguished yearly scholarship awarded to the top-of-the-class computer science students of the Computer Science Department of the University of Crete.

Xrisanthos and Anastasia Karidis Scholarship

June 2020

University of Crete

Awarded to the University of Crete students who excelled in their High School exams.

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.

Extras

diNo & diip Seminars

University of Paris & Data Intelligence Institute of Paris

Paris, France

Sept. 2024 - Present

Co-organizing the diNo-diip seminars, which facilitate weekly presentations and discussions between professors and students, focusing on current research trends in the broad field of data management and data analytics.

9th Heidelberg Laureate Forum (HLF)

Heidelberg Laureate Forum Foundation

Heidelberg, Germany

Sept. 2022

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

Seeds for the future Event

Huawei Technologies Co., Ltd

Shenzhen, China (remote)

Nov. 2021

Invited to participate in Huawei's Seeds For The Future event, which focused on Cloud Computing, 5G, and AI. Designed and resented 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.