

Manos Chatzakis

Curriculum Vitae
Fall 2023

PERSONAL DETAILS

Full Name Emmanouil Chatzakis
Address Lausanne, Switzerland
Phone +30 697 864 0371 (Greek), +41(0) 76 708 41 80 (Swiss)
Mail manolis.chatzakes@gmail.com
Links [LinkedIn](#), [Google Scholar](#), [GitHub](#), [Homepage](#)

EDUCATION

MSc. Computer Science Sept. 2022 - Present
École Polytechnique Fédérale de Lausanne (EPFL)
Attending the Master of Computer Science program of EPFL. GPA: 5.00/6.00 (ongoing).
BSc. Computer Science Sept. 2018 - Jun. 2022
University of Crete
Thesis: “Distributed Query Processing in Large Data Series Collections”. Graduated First-of-Class with GPA 9.43/10.00.

EXPERIENCE

Research Intern Feb. 2024 - Aug. 2024
CEA, Paris, France
Incoming position on Scalable subsequence similarity search in seismic time series.

Research Intern Jul. 2022 - Sept. 2022
DIAS lab, summer@EPFL, Lausanne, Switzerland
Developed a scalable similarity-search protocol for high-dimensional vector embeddings to perform semantic-rich string similarity joins, achieving up to 245x speedup compared to naive join algorithms. Supervised by Viktor Sanca and Prof. Anastasia Ailamaki. Technologies: **C++, Python, SIMD, FastText, FAISS**.

Visiting Thesis Student April 2022 - May 2022
diNo Group, University of Paris Cité, Paris, France
Developed a distributed similarity search protocol for data series that achieves up to 6x speedup compared to state-of-the-art algorithms. Supervised by Prof. Panagiota Fatourou and Prof. Themis Palpanas. Technologies: **C, Python, MPI, SIMD, Slurm, NumPy, SciPy**.

Undergraduate Research Assistant Oct. 2019 - Dec. 2021
IS Lab, ICS, FORTH, Crete, Greece
2021 Developed RDFsim, a tool that implements similarity-based browsing for knowledge graphs using vector embeddings. Technologies: **Java, Python, JavaScript, AJAX, jQuery, SPARQL, BERT, word2vec**.
2020 Developed a tool for creating SIPs (METS, BagIt) for digital preservation, used by CHI. Technologies: **Java, PostgreSQL**.
2019 Developed CoSpi visualization algorithm. Technologies: **Java**.
Supervised by Prof. Yannis Tzitzikas, Dr. Michalis Mountantonakis and Yannis Marketakis.

Undergraduate Teaching Assistant Sept. 2021 - Jan. 2021
Computer Science Department, University of Crete, Greece
Teaching Assistant for Object Oriented Programming with Java (lecturing, grading, student supervision, assignment creation, and monitoring).

PUBLICATIONS

Conferences and Journals:

1. Manos Chatzakis, Panagiota Fatourou, Eleftherios Kosmas, Themis Palpanas, Bo-tao Peng. “**Odyssey: A Journey in the Land of Distributed Data Series Similarity Search**”, VLDB 2023.
2. Manos Chatzakis, Michalis Mountantonakis, and Yannis Tzitzikas. “**RDFsim: Similarity-Based Browsing over DBpedia using Embeddings**” Information MDPI, Special Issue: “Data and Metadata Management with Semantic Technologies”, 2021. RDFsim was published in the original DBpedia Newsletter and was advertised by WikiData.
3. Yannis Tzitzikas, Maria Papadaki and Manos Chatzakis. “**A Spiral-like Method to Place in the Space (and Interact with) too Many Values**”, Journal of Intelligent Information Systems, Springer Online, 2021.

Two papers are under submission/preparation:

1. Viktor Sanca, Manos Chatzakis, Anastasia Ailamaki. “**Title to be announced**”: Semantic-rich string similarity joins using embeddings. Under preparation, 2023.
2. Manos Chatzakis, Panagiota Fatourou, Eleftherios Kosmas, Themis Palpanas, Bo-tao Peng. “**Title to be announced**”: Distributed Data Series similarity search with sophisticated work-stealing algorithms. Under preparation, 2023.

AWARDS

Onassis Public Benefit Foundation Scholarship

July 2023

Onassis Public Benefit Foundation

Scholarship awarded to 60 Greek students to support MSc. studies at international institutions.

John S. Latsis Public Benefit Foundation Scholarship

July 2022

John S. Latsis Public Benefit Foundation

Scholarship awarded to 20 Greek students to support MSc. studies at international institutions.

“Elisavet Karamintzoy” Award

July 2022

University of Crete

Granted to the top students of the University of Crete.

Distinguished “Stelios Orfanoudakis” Scholarship

September 2019,20,21

FORTH-ICS

Awarded to three top-of-class students of each academic year.

“Xrisanthos and Anastasia Karidis” Scholarship

June 2020

University of Crete

Awarded to the students that excelled in their High School exams.

EVENTS & LECTURES

9th Heidelberg Laureate Forum

September 2022

Heidelberg Laureate Forum Foundation

Selected to participate as one of the hundred Computer Science researchers of the 9th HLF. A Greek interview about the conference and my work for the website Thales&Friends is available here.

Distributed iSAX Indices: The family of DPiSAX

November 2021

diNo Seminar, University of Paris Cité

Presented the ongoing research on distributed iSAX indices, with focus on the paper “Massively Distributed Time Series Indexing and Querying” for the diNo Group Seminar.

Seeds for the future Event

November 2021

Huawei Technologies Co., Ltd

Participated in Huawei’s “Seeds For The Future” seminar, which focused on Cloud Computing, 5G, and AI. Presented the wildfire protection idea “Artemis: An Innovative Crowdfunding Solution through Freemium Gaming for Preventing Future Wildfires!” (top three application ideas of the event).

SKILLS & INTERESTS

<i>Programming</i>	Expert: Java, C, Python, Experienced: C++, Scala, Go, JS
<i>Frameworks</i>	NumPy, Pandas, PyTorch, PySpark, MPI, Spark, jQuery, AJAX
<i>Databases</i>	SQL, SPARQL
<i>Software</i>	Git, Unix, Tomcat, Maven, Gradle, Slurm, Make
<i>Research</i>	Data Management, Distributed Systems, Data Series, Similarity Search
<i>Languages</i>	English (Proficiency Level), Greek (Native Language)

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, Pandas, Numpy, sklearn**), 2023
- **ChatMGL.** A GPT-based Large Language Model for Data Science questions gathered from courses of EPFL (**Python, PyTorch, Pandas, NumPy**). ChatMGL is trained over a dataset of Data Science questions generated from LLMs and processed by other public datasets. We make our dataset publicly available in our repository, 2023.
- **Byzantine Vector Consensus.** Improving the complexity of Byzantine Vector Consensus with Leader-Based algorithms. This project was completed as a semester project at EPFL, under the supervision of Jovan Komatovic and Prof. Rachid Guerraoui of the Distributed Computing Laboratory, 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 (**Python, PyTorch, NumPy, Pandas**). 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, Pandas, NumPy**), 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++11, Allegro5**). The project also contains an example implementation of the classic Super Mario Bros game, 2022.

- **AlphaCompiler.** Fully functional Compiler and Virtual Machine for Alpha programming language (JavaScript-like syntax), implemented from scratch (**C, Lex, Yacc/Bison**), 2021.
- **MicroTCP.** A lightweight transport layer protocol supporting TCP mechanisms (Handshakes, Sliding Window), implemented from scratch using UDP (**C, Sockets**), 2020.

REFERENCES

Available upon request.