Athanasios Tonios

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SUMMARY

Computer Science and Engineering graduate from the University of Ioannina, focused on data science, machine learning, and NLP. Analytical thinker and fast learner with a strong technical foundation, able to take projects from idea to implementation and eager to keep growing in collaborative teams. Interested in entry-level roles in machine learning, data science, or software engineering.

EDUCATION

Diploma of Engineering (Integrated Master, 300 ECTS), Computer Science and Engineering
University of Ioannina · 2020 – 2026

SELECTED PROJECTS

- **Fair Community Detection in Graphs** (Diploma thesis, 2026): Developed Fair Louvain, an adaptation of the Louvain algorithm that finds well-connected communities in a graph while ensuring that groups defined by sensitive attributes are fairly represented in each one. Evaluated it against existing methods on synthetic graphs and real-world networks, measuring both community quality and fairness.
- **CNN News RAG Assistant** (Information Retrieval, 2025): Built a local RAG assistant that answers questions over about 4,000 CNN articles. Retrieves the five most relevant chunks with Sentence-Transformers embeddings and a FAISS index, generates grounded answers with a local LLM through Ollama, and shows the supporting text in a desktop GUI.
- **Articles Search Engine** (Information Retrieval, 2025): Implemented a desktop search engine for CNN articles with Java and Apache Lucene, offering multi-field search, BM25 ranking, pagination, and query-term highlighting. Added personalized re-ranking that boosts results using terms from the user's recent searches.
- **Citation Prediction** (Natural Language Processing, 2025): Link prediction model that predicts citations between papers, using an XGBoost classifier on graph features, shared authors, and the semantic similarity of paper abstracts.
- **Greek++ Compiler** (Compilers, 2025): Python compiler that translates greek++, a small language with Greek keywords, into RISC-V assembly. Includes lexical analysis, a recursive-descent parser, semantic checks, a symbol table, and intermediate code generation.
- **SocialBookstore** (Software Engineering, 2024): Web application where users share books, with sign-up and login, book offers and requests, search, and personalized recommendations. Developed with Spring Boot and MySQL with 40 unit tests.

TECHNICAL SKILLS

- **Programming:** Python, Java, C, SQL
- **ML and data:** PyTorch, pandas, NumPy, NetworkX, FAISS, Sentence-Transformers
- **Search and frameworks:** Apache Lucene, Spring Boot, OR-Tools
- **Areas:** Data mining, Machine learning, NLP, Information retrieval, Graph and network analysis

LANGUAGES

- **Greek:** Native
- **English:** C2 (ECPE)