

TOMMASO VACCARI

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SUMMARY

B.Sc. student in Engineering & Computer Science with strong foundations in algorithms, systems, and backend engineering. Experienced in building ML models (PyTorch, LSTM/Seq2Seq, Transformers) and scalable web applications (Flask, Next.js, Firebase). Skilled in Python, C/C++, and software design.

EDUCATION

Politecnico di Milano

Milan, Italy

B.Sc. in Engineering & Computer Science

2023-Present (Expected 2026)

- **Average:** 29.3/30; **Selected coursework** (all 30/30 cum laude): Data Structures & Algorithms, Operating Systems, Computer Architecture

HONORS & AWARDS

• Top Freshman Award, Politecnico di Milano (2024)

Recognized by Politecnico di Milano as one of the best freshmen in Engineering & Computer Science.

• Superhero Valley Mentee (2025)

Selected among top Italian students for a mentorship program at Superhero Valley, a community dedicated to guiding outstanding computer science students. Received personalized mentorship from experienced mentors working at leading big tech companies to foster personal growth and positive community impact.

PROJECTS

Seq2Seq Symbolic Expression Recovery from Taylor Series | *Python, PyTorch, SymPy*

- Generated a dataset of 130K truncated Taylor expansions using SymPy; trained encoder-decoder (LSTM/Transformer) models in PyTorch for symbolic regression.
- Achieved 92.2% exact-match accuracy and 95.1% token-level accuracy on held-out data.
- Tackled overfitting, numeric stability, and tokenization issues to improve model generalization.

PAC Investment Analysis Web App | *Next.js, FastAPI (REST API), Data Engineering & Visualization*

- Designed a FastAPI backend with typed Pydantic schemas, OpenAPI docs, and versioned endpoints for reproducible investment simulations.
- Engineered a data pipeline normalizing Yahoo Finance historical data into JSON snapshots, removing runtime dependency on third-party APIs.
- Built a Next.js frontend with typed API integration and interactive charts; optimized datastore loading to achieve sub-second latency.

Eisenhower Matrix Task Manager | *Next.js, Firebase Auth & Firestore*

- Built a full-stack productivity app with Next.js, Firebase Auth, and Firestore for real-time task synchronization.
- Implemented secure authentication and Firestore access rules; deployed to Firebase Hosting for public access.

TECHNICAL SKILLS

Programming Languages: Python, C, C++, JavaScript, SQL

ML & Data: PyTorch, TensorFlow, scikit-learn, NumPy, Pandas

Systems & Tools: Linux, Git/GitHub, Google Cloud Platform (GCP), Jupyter, Docker, GitHub Actions, SQLite

CS Fundamentals: Data Structures & Algorithms, Operating Systems, Compiler Design, Object-Oriented Design, Machine Learning, Neural Networks

Web & APIs: FastAPI, Flask, REST, HTTP/JSON, HTML, CSS