Michele De Cillis

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Experience

Research Intern *Sep. 2025 – Dec. 2025*
NERDS Lab @ ITU *Copenhagen, DK*
Conducted bachelor's thesis research on measuring polarization in large-scale directed social networks during an Erasmus traineeship, including a literature review across social media analysis, network polarization, and network science. Stack: Python, NumPy, PyTorch, Pandas.

- Measured polarization on directed networks by applying the Magnetic Laplacian, the **first use in this context**
- Adapted an HPC pipeline over the **entire historical Reddit dataset** to build directed instead of undirected networks
- Validated results against theoretical toy-network models, reaching a **0.65 average correlation**
- Earned the **highest thesis grade (7/7)**. Read here

Co-founder *Apr. 2025 – Dec. 2025*
Polyneta *Remote*
Co-founded a startup connecting companies that sell to municipalities to simplify direct-award procurement, running customer discovery and building the early product with AI-accelerated development.

- Built the alpha (pre-MVP) aggregating company services for municipalities, using AI to accelerate development
- Prototyped a scraping, RAG, and OCR pipeline to extract structured data from disorganized public-sector PDFs
- Ran customer discovery through **3-5 exploratory interviews** and Mom Test surveys
- Pitched at the FondazioneUniMi incubator, backed by extensive market research

Front-End Engineer *Oct. 2021 – Dec. 2022*
Pane&Design (PED, part of humanvsmachine.co) *Milan, IT*
Built and optimized high-traffic e-commerce sites and internal telemedicine tools for a Fortune 500 client at a digital consulting agency, using React, TypeScript, styled-components, Tailwind, and Material UI.

- Cut re-renders and load times by **perceived 50%** on a high-traffic e-commerce site (**100k monthly visits**) via microservices with dynamic JS loading
- Built a telemedicine tool for the client's ophthalmologists, unifying a multi-section medical history form into a single-page flow with react-jsonschema-form
- Managed one developer through task assignment and code review
- Contributed to further high-traffic client sites (**up to 200k monthly visits**) and to the agency's own website

Full-Stack Engineer *July 2020 – Sep. 2021*
Online Impresa (part of areaweb.org) *Bari, IT*
Sole developer at a small software agency serving SMEs, building the company's flagship mobile app platform from scratch with TypeScript, React Native, GraphQL, and Expo, and working directly with clients on requirements.

- Cut app deployment **from 1 hour to 15 minutes** by building a tool that clones the template repo, loads client specs, and builds with Expo
- Built the company's flagship app from scratch as sole developer with TypeScript, React Native, GraphQL, and Expo; shipped to the Play Store and App Store
- Delivered **100 client apps**, gathering and implementing requirements directly with clients
- Built internal tools, including a WhatsApp bot posting every closed order to a live office dashboard

Education

Università degli Studi di Milano *Sep. 2022 – Apr. 2026*
BSc Computer Science

- **Relevant coursework:** Calculus, Linear Algebra, Physics, Data Structures and Algorithms

Université Paris-Saclay *Sep. 2023 – June 2024*
Erasmus+ Exchange Program

- **Relevant coursework:** Bio Informatics, Machine Learning & NLP, Linear Programming

Projects

Open Source Contributions 2025 – Present

- Usability bugfixes (mainly state sync) in Pixelfed (**+7k stars**, React Native)
- Improved the Italian translation in Ghost Blog (**+54k stars**)
- Ported and maintaining a package in nixpkgs (**+25k stars**, Nix language)

Personal Homelab Mar. 2025 – Present
Self-host personal services (Nextcloud, Immich, and more) on a VPS with `NixOS`, using reproducible configuration-as-code to add services and their infrastructure (backups, nginx) quickly, with the same config shared across devices. Uses Tailscale for VPN, nginx as a reverse proxy, and daily BorgBase backups.

ALS Biomarker Identification May 2024

Analyzed RNA-Seq data and developed a model that generalizes with *90% accuracy* for the ALS group. Authored comprehensive documentation of a workflow to identify potential biomarkers.

Technical Skills

Language and Tools: TypeScript, JavaScript, HTML/CSS, GraphQL, PostgreSQL, Python, Nix, Git, Bash, Linux, Docker, Figma, Typst, LaTeX
Frameworks and Libraries: React, React Native, TanStack Query, Node.js, NumPy, DuckDB, PyTorch, Matplotlib, scikit-learn

Accomplishments

Top-Percentile Academic Ranking | *University of Milan* 2024/25
Ranked in the top 20% for academic performance and the top 15% for graduation grade within the reference academic year.

First Place | *University Startup Challenge* 2025
Won first place as a team of 4 by conducting market research, gathering early feedback, and building the pitch, landing page, and Figma prototype for what became Polyneta.

Silicon Valley Study Tour Aug. 2025
Selected for a competitive program visiting leading companies and universities (Cisco, Apple, Google, LinkedIn, Electronic Arts, PureStorage, Sysdig, Zoox, Stanford, Berkeley), attending keynotes from their teams and building connections.

Languages

Italian (Native speaker), English (C1 Advanced), French (B1), Spanish (B1)

Certifications

Cambridge C1 Advanced | *Cambridge English Certification* Mar. 2026