Thomas Ferri

Doctoral student/worker in Soft Matter Physics

PhD student in Soft Matter Physics specializing in simulations and data analysis. Motivated, curious, and open to collaborations in research and innovation. Member of the CLIMB Marie Curie project.

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Projects and articles on my Onedrive :
https://1drv.ms/f/c/449afb1433676327/IgASO25gaXQAQZefmeDroCLQAejbR9OKVct64NzRvkMedls?e=XbOdPj

Core business

PHASE 2 **Skill development**

During my academic path and PhD, I regularly assess my skills and define learning goals. I actively seek feedback from supervisors and colleagues, adapt my methods, and expand my expertise through courses, self-study, and research practice. I progressively moved from purely technical tasks to planning projects, mentoring students, and coordinating small collaborations. This helped me develop autonomy, strategic thinking, and the ability to align my skills with evolving research needs. I also contribute to others' development by sharing tools, code, and methods, fostering a collaborative and growth-oriented environment.

PHASE 1 **Evaluation**

Through research and coursework, I learned to critically assess scientific literature by comparing methods, assumptions, and results. I regularly evaluate my own work using quantitative criteria and peer feedback. Presenting results in seminars, journal clubs and exams trained me to defend ideas before critical audiences and integrate external evaluations. I also review the work of peers in group meetings and student projects, providing constructive and realistic feedback. This continuous practice strengthened my analytical rigor, objectivity, and ability to judge quality and added value in complex technical contexts.

PHASE 1 **Information management**

During my Master's and PhD, I regularly build "state of the art" summaries by reviewing and organizing scientific literature using databases such as Nature, ResearchGate, and arXiv. I critically assess sources by comparing methods, reproducibility, and impact. I structure references with dedicated tools (LaTeX) and maintain organized data repositories for simulations and results. I design file hierarchies and scripts to ensure traceability and sustainability of data. I follow good practices for data security and backup, and I consult supervisors and IT staff when needed to optimize information management workflows.

PHASE 2 **Expertise and methods**

My research requires constant monitoring of advances in soft-matter physics, simulation methods, and data analysis. I regularly integrate new tools (Python libraries, numerical methods, ML approaches) into my workflow. I collaborate with physicists, chemists, and computer scientists, learning to adapt language and methods across disciplines. I frame complex problems into tractable models, define hypotheses, and design numerical experiments. Writing project proposals and presenting ideas in seminars trained me to build clear arguments and adapt them to different audiences. I also support junior students by sharing workflows, code practices, and methodological guidance, improving collective efficiency and quality.

Personal and

relational qualities

PHASE 1 **Communication**

I developed strong communication skills through presentations, teaching, and collaborations. I like to present my work in seminars, adapting content and language to scientific or non-specialist audiences. Working in multilingual environments strengthened my ability to communicate in English and Italian at proficient levels. I use diverse format, slides, reports, code documentation, and emails, to convey ideas clearly. I mentor students and share methods, fostering knowledge transfer with a pedagogical approach. I also manage my digital presence through professional profiles and repositories, ensuring clarity and consistency in how my work is presented and accessed.

PHASE 1 **Analysis, synthesis and critical thinking**

Research trained me to continuously analyze results, question assumptions, and compare my findings with those of collaborators and the literature. I regularly synthesize large amounts of information into clear models, figures, and summaries, focusing on what is essential for a given objective. Designing experiments and simulations taught me to prioritize variables and test hypotheses rigorously. Discussions with supervisors and peers help me challenge my own viewpoints and revise interpretations when evidence requires it. This practice developed intellectual rigor, openness to alternative perspectives, and the ability to think critically beyond fixed frameworks or dogma.

PHASE 1 **Open-mindedness and creativity**

Working at the interface of physics, computation, and data science taught me to remain flexible and curious. I regularly learn new concepts and tools outside my initial training, from machine learning to materials science. Research encourages constructive doubt: I question models, explore alternatives, and test new ideas through simulations and experiments. I actively seek interdisciplinary collaborations and adapt to different scientific cultures in international environments. Moving between countries and teams strengthened my openness and cultural awareness. This context trained me to seize opportunities, innovate, and transform uncertainty into creative solutions.

PHASE 1 **Commitment**

My academic path taught me to identify what truly motivates me: curiosity, problem-solving, and the desire to contribute meaningful knowledge. Research naturally involves setbacks, failed simulations, negative results, or long debugging phases, which trained me to persist and adapt. I organize my work to handle routine tasks efficiently while keeping long-term goals in focus. Each difficulty becomes an opportunity to improve methods and understanding. I actively seek feedback from peers and supervisors, using their support to overcome obstacles. This environment strengthened my resilience, tenacity, and commitment to continuous progress and excellence.

PHASE 1 **Integrity**

My training as a researcher is grounded in strong ethical standards. I followed a dedicated course on research integrity and work environment, which clarified best practices in data handling, authorship, intellectual property, and conflict of interest; I also possess an attestation about it. In my daily work, I ensure transparency, reproducibility, and proper citation of others' contributions. I respect institutional rules, confidentiality, and collaborative agreements. I document methods and results rigorously and communicate them honestly, including limitations. By aligning my actions with these principles, I build trust with collaborators and supervisors and contribute to a responsible and reliable research environment.

PHASE 2 **Balance**

Balancing demanding research with personal life taught me to manage pressure and remain effective under stress. I learned to prioritize tasks, set realistic goals, and accept constructive opposition as a way to improve. Moving abroad and adapting to new academic cultures strengthened my ability to build on my strengths while addressing weaknesses. I separate work challenges from personal life by maintaining routines, physical activity, and clear boundaries. This helps me stay focused, resilient, and mentally available, even during intense periods, ensuring sustainable performance and well-being over time. I also followed a stress management course to better understand my limits and overcome difficulties.

PHASE 2 **Listening and empathy**

Working in international and collaborative research environments taught me the importance of attentive listening and empathy. In group meetings and mentoring contexts, I make a conscious effort to understand others' perspectives, constraints, and expectations before responding. I adapt my communication to different backgrounds and levels of experience, ensuring everyone feels heard and respected. Supporting peers during challenging phases of research helped me recognize signs of stress and offer constructive help. I regularly express gratitude for feedback and collaboration, fostering trust and positive working relationships. These experiences strengthened my ability to build supportive, respectful, and effective professional interactions.

PHASE 1 **Negotiation**

In research projects, I frequently negotiate priorities, deadlines, and resource use with supervisors, collaborators, and peers. I learned to identify underlying needs behind requests, scientific goals, time constraints, or technical limits, by listening carefully and asking clarifying questions. Preparing meetings and gathering relevant information allows me to propose realistic options and trade-offs. Whether coordinating shared code, data access, or project directions, I aim to balance individual and collective objectives to reach constructive agreements. These experiences developed my ability to build consensus while respecting constraints and maintaining collaborative relationships.

Business management and value creation

PHASE 1 **Managing change**

Research projects evolve continuously as new results, constraints, or opportunities emerge. I learned to adapt objectives, methods, and timelines in response to unexpected outcomes, technical limits, or new ideas. When simulations fail or hypotheses change, I reorganize priorities and consult supervisors and colleagues to redefine strategies. Moving between institutions and research topics also required rapid adjustment to new environments, tools, and expectations. These experiences trained me to remain flexible, anticipate impacts of change, and mobilize advice and resources to keep projects coherent and productive despite uncertainty.

PHASE 1 **Managing risks**

Although my work is mainly based on numerical simulations, I operate within an institute that hosts experimental laboratories with chemical, physical, and technical hazards. I completed specific training courses on risk prevention, safety procedures, and work environment. These courses taught me to identify potential risks, understand emergency protocols, and adopt responsible behavior in shared spaces. In my projects, I assess technical risks such as data loss, computational failures, and reproducibility issues, and I mitigate them through backups, version control, and validation checks. This context developed my awareness of safety, responsibility, and risk anticipation in a research environment.

PHASE 2 **Decision-making**

During my Master's thesis, I worked largely independently, which required constant decision-making on methods, priorities, and problem-solving strategies. I learned that no solution is perfect: each choice involves trade-offs between accuracy, time, and available resources. I took responsibility for these choices, monitored their outcomes, and revised them when results or constraints changed. Facing technical difficulties and dead ends taught me to reassess assumptions, seek advice when needed, and adjust direction without losing momentum. This experience developed my autonomy, judgment, and ability to make reasoned decisions while accepting their consequences.

Strategy and Leadership

PHASE 1 **Leadership**

Throughout my studies, I supervised several students in academic projects, helping them structure their work, define objectives, and overcome technical difficulties. This role taught me

how to guide without hierarchy, motivate others, and adapt my support to different profiles. In my current position, I am preparing to supervise two Master’s internships in machine learning for chemistry-engineering students, coordinating objectives, timelines, and methods. I regularly build trust through availability, clear communication, and constructive feedback. These experiences developed my ability to mobilize skills, build alliances, and lead projects based on collaboration and mutual confidence rather than formal authority.