Cross-Domain Competency Matrix (CDCM)

Candidate: Fernando Manuel Gómez Castro

Expertise: Solar Energy R&D | Modeling & Simulation

1. Cross-Domain Strategic Overview

The Competency Matrix serves as a visual guide to Fernando's multi-faceted expertise. Unlike a standard resume, it highlights the intersections between modeling, lab work, and leadership.

2. The Core Competency Matrix

Domain	Technical Skillset	Evidence of Mastery
Modeling	Mathematica, COMSOL, EES	10+ years of simulation experience.
Engineering	Ray Tracing, Thermodynamics	Developed custom shading tools for urban BIPV.
Experimental	Test-Bed Design, Validation	Validated doctoral research via physical testing.
Leadership	Grant Writing, Mentoring	Secured €360k in funding; supervised ERASMUS.

3. Deep Dive: Simulation & Programming

Fernando’s programming skills are specifically tuned for engineering applications. He does not just "use" software; he builds tools.

- **Fortran/C++:** Used for low-level performance simulations where speed and precision are paramount.
- **Industry Foundation Classes (IFC):** Optimized models for building energy performance (BIM integration).
- **Scripting:** Automation of data processing workflows to handle large experimental datasets.

4. Deep Dive: Analytical & Communication

A scientist’s value is multiplied by their ability to communicate. Fernando excels in translating complexity into clarity.

- **Scientific Writing:** Author of 18+ papers, navigating the rigorous peer-review process.
- **Visual Communication:** Expert in using OriginPro and MS Visio to create high-impact technical posters and diagrams.
- **Public Speaking:** Presented research at global summits in Germany, UAE, and Spain.

5. The "Bridge" Skills

The most valuable engineers are those who can span multiple disciplines. Fernando’s bridge skills include:

> **The Theory-to-Market Bridge:** The ability to take a mathematical concept, simulate its feasibility, build a prototype, and write a grant to fund its commercialization.

6. Summary of Professional Attributes

- **Analytical Thinking:** Breaking down complex thermal problems into solvable equations.
- **Attention to Detail:** Ensuring sensor calibration and simulation parameters are precise.
- **Global Perspective:** Leveraged 15+ years of international experience to solve universal energy problems.