UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH
Escola d'Enginyeria de Barcelona Est

Industrial Day – Project Submission Form

Please complete this form to provide information about the projects your company will present during Industrial Day. This information will help us organize and communicate available Master's Thesis (TFM) opportunities to students.

Company Name
5SKILL Solutions

Project Title
AI-Driven Production Planning and Finite-Capacity Scheduling

Project Description
Project overview. Explore how artificial intelligence and operations research can improve production planning in manufacturing companies. **Student activities.** Design a scheduling engine that considers machine capacity, workforce availability, operation sequences, material constraints, setup times and delivery deadlines. Compare optimisation techniques such as constraint programming, mathematical optimisation and AI-assisted heuristics using realistic, anonymised or synthetic industrial data. Allow planners to simulate disruptions and adjust priorities. **Expected outcomes.** Deliver a working prototype, a documented optimisation model and a simple planner interface. Assess performance against a baseline using KPIs such as delivery delays, resource utilisation and changeover times. Discuss future integration with ERP/MES environments.

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Responsible Person
Pablo Velasco Bautista

Contact email
pvelasco@5skill.com

Is there financial support available? (Yes/No)

☐ Yes

☒ No

Number of available positions
To be defined, depending on the project and student availability

Thank you for your collaboration and participation in Industrial Day.