UNIVERSITÀ POLITECNICA DELLE MARCHE

Dipartimento Ingegneria Informazione

Seminar Announcement

June 8, 2026, 11:00–12:00, Faculty of Engineering, Room 160/2

GENETICALLY PACKED.
GENETICS USED TO SOLVE OPTIMIZATION PACKING PROBLEMS

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Abstract

How can **Priority Rules** be designed to obtain quality solutions to optimization problems in just a few milliseconds? In this talk, I describe how **Genetic Programming** can be used to obtain mathematical expressions to prioritize choices in combinatorial optimization problems. We will explore how these **heuristic** expressions, named Priority Rules, can be used as **Packing Policies** for the **Bin Packing Problem** and how a set of trained expressions is exploited collaboratively on new unseen instances of this bi-objective packing problem.

Bio

Jesús Quesada Matilla, software engineer by the **University of Oviedo** in 2022 and master's graduate in AI research by the University Menéndez Pelayo in 2023, is now preparing his doctoral thesis. He focuses his attention on the application of **Genetic Programming** to real world combinatory optimization problems, in particular, the Bin Packing and Cutting Stock Problems, and how we can automatically design **heuristic** Priority Rules to efficiently provide quality solutions to problem instances.

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