

Federico Berto

Graduate Student

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Social Networks



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Linkedin Profile: federicoberto

Twitter Profile: fedebotu

Slack Workspace: AI4CO

About Me -

I am a PhD student in the Industrial and Systems Engineering department at KAIST, where I am fortunate to be advised by Prof. Jinkyoo Park in the Systems Intelligence Lab (SILAB 6).

My main research interest is applied deep learning, such as decision-making in discrete and continuous spaces. I have recently been working in mainly two areas: neural combinatorial optimization (NCO) and scientific machine learning (AI4Science).

I love to work on open-source projects. I am a founder of the AI4CO open research group and collaborate with DiffEgML**Ø**.

Education

2022-2025 **PhD Student** KAIST, South Korea

PhD student in Industrial and Systems Engineering focusing on applied research in deep learning: neural combinatorial optimization

and scientific machine learning.

2020-2022 Master's Degree KAIST. South Korea

MSc in Industrial Engineering. Thesis on deep learning for decision-

making in continuous dynamical systems.

2017-2020 **Double Bachelor's Degree**

Tongji Univ., China; Univ. of Bologna, Italy Double BSc in Automation Engineering and member of the Almatong

program.

Research

2024 PARCO: Parallel Autoregressive Policies for Efficient Multi-Agent

Combinatorial Optimization

F Berto*, C Hua*, J Park, K Ahn, C Kwon, J Park

(submitted to KDD 2024)

Ensembling Prioritized Hybrid Policies for Multi-agent Pathfinding

H Tang*, F Berto*, J Park (submitted to IROS 2024)

2023 RL4CO: a Unified Reinforcement Learning for Combinatorial Opti-

mization Library

F Berto*, C Hua*, J Park*, M Kim, H Kim, J Son, H Kim, J Kim, J Park

NeurIPS 2023 GLFrontiers Workshop (Oral)

Learning Efficient Surrogate Dynamic Models with Graph Spline

Networks

C Hua*, F Berto*, M Poli, S Massaroli, J Park

NeurIPS 2023 (previously Oral in ICML AI4Science WS)

Bootstrapped Training of Score-Conditioned Generator for Offline

Design of Biological Sequences M Kim, F Berto, S Ahn, J Park

NeurIPS 2023

DevFormer: A Symmetric Transformer for Context-Aware Device

Placement

H Kim*, M Kim*, F Berto, J Kim, J Park

ICML 2023

2022 **Transform Once: Efficient Operator Learning in Frequency Domain**

M Poli*, S Massaroli*, F Berto*, J Park, T Dao, C Ré, S Ermon

NeurIPS 2022

Meta-SysId: A Meta-Learning Approach for Simultaneous Identi-

fication and Prediction

J Park, F Berto, A Jamgochian, MJ Kochenderfer, J Park

arXiv preprint arXiv:2206.00694

Neural Solvers for Fast and Accurate Numerical Optimal Control

F Berto, M Poli, S Massaroli, J Park

ICLR 2022 (previously Spotlight in NeurIPS DLDE WS)

Federico Berto

Graduate Student

Software Skills

Python
PyTorch library

Open-source contributor to re-

lated projects

∆ Linux • • • •

Daily user

Server management

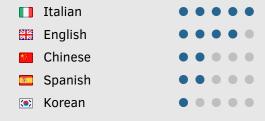
Interfacing to HomeAssistant

Programming with AI ● ● ● ● ●

Including Copilot and GPT4

Believing LLMs can be great teachers for new skills

Languages



Core Soft Skills -

Problem solving Adaptability

Teamwork Motivation

Leadership Active listening

Working Experience

2021-now **Researcher** KAIST SILab, South Korea

Currently focusing on the intersection of deep learning and dynamical systems and working on novel differential equation solvers.

2021-now Internship Student Daewoong Pharmaceuticals

AI and Big Data research internship on the study and optimization

of pharmaceutical production processes.

2019-2020 Internship COMAU Robotics, China

Assistant in designing automated engine assembly lines from the

FCA group.

2015-2020 **Private Teacher** Self-employed, Italy

Private lessons for high school and university students in subjects

including Physics, Maths, and Latin.

2013-2017 **Volunteering Work** ODAR Belluno, Italy

Children entertainer and helping in charity venues for disabled peo-

ple

Prizes and Achievements

currently KAIST International Scholarship South Korea

Full-tuition scholarship and monthly stipend for academic achieve-

ments in Engineering.

currently Daewoong Foundation AI and Big Data Scholarship South Korea

Monthly allowance granted based on merit and a coding test.

2022 ICML 2022 Outstanding Reviewer Online

Job as peer reviewer for the International Conference of Machine

Learning (Top 10%).

2017 Almatong Program China

Award of full scholarship based on academic merits and yearly al-

lowance for a double BSc program with Tongji University.

Licenses and Certificates

English IELTS level 8.0 certification holder
Chinese HSK level 3 certification holder

Driving Holder of three different driving licenses from Italy, China and South

Licenses Korea

Extra-Curricular Hobbies

Traveler Daring trying out new experiences and fond of culture exchanges

Tech Nerd Always looking for the latest developments and trends

Hiker Multi-day trekking routes lover

Open-Source Sometimes about research, others just for fun - from RL libraries to

Contributor bots for reserving train tickets - here are some examples