



Research Engineer Intern - Optimisation/RL/OR

March 2024 (starting date flexible). 4-6 month internship.

Industrial supervisor: Rebecca Jeffers.

Apply here: <https://www.instadeep.com/internship-offer/95f46ea8-be6f-419d-a91f-b5aa6a6637cc/>

REQUIREMENTS

- Engineer/Masters end-of-studies in a relevant discipline (e.g. Machine Learning, computer science, operations research, mathematical programming) or related areas.
- Excellent written and verbal communication skills in English.
- Ability to work in the multicultural and multidisciplinary team is a must.
- Theoretical and practical knowledge in the fields of mathematical programming (specifically combinatorial problems and mixed integer programming) and reinforcement learning.
- Python programming (best practices, numpy, mypy, pytest, pyomo/pulp).
- The ability to communicate results clearly in presentations and reports.
- An awareness of DL tools such as pytorch, tensorflow or jax.

NICE TO HAVE

- Experience/knowledge of industrial and/or open source solvers such as coin, cplex, gurobi, SCIP would be an advantage.
- Specific experience using jax.

ABOUT INSTADEEP

InstaDeep, founded in 2014, is a pioneering AI company at the forefront of innovation. With strategic offices in major cities worldwide, including London, Paris, Berlin, Tunis, Lagos, Cape Town, Boston, and San Francisco, InstaDeep collaborates with giants like Google DeepMind and prestigious educational institutions like MIT, Stanford, Oxford, UCL, and Imperial College London. We are a Google Cloud Partner and a select NVIDIA Elite Service Delivery Partner. We have been listed among notable players in AI, fast-growing companies, and Europe's 1000 fastest-growing companies in 2022 by Statista and the Financial Times. Our recent acquisition by BioNTech has further solidified our commitment to leading the industry.

Join us to be a part of the AI revolution!



INTERNSHIP AIMS

The internship will aim to continue a previous research work that combined decomposition methods used in classic optimisation with RL methods for the bin packing problem. InstaDeep's open-source library **Jumanji** will be used for this purpose, as well as classic mixed integer linear programming solvers.

Jumanji's Bin Packing environment will be developed further so that a full end-to-end RL agent can be compared with the decomposition + RL solution already developed by InstaDeep. The successful intern will also work on generating challenging test cases for the methods developed.

As well as work on open-sourced libraries, the intern will also have the opportunity to experience working with our internal end to end RL solution for the bin packing problem: DeepPack, allowing for experience in both research and applied teams during the internship.

Our commitment to our people

We empower individuals to celebrate their uniqueness here at InstaDeep. Our team comes from all walks of life, and we're proud to continue encouraging and supporting applicants from underrepresented groups across the globe. Our commitment to creating an authentic environment comes from our ability to learn and grow from our diversity, and how better to experience this than by joining our team? We operate on a hybrid work model with guidance to work at the office at least 2 to 3 days per week to encourage close collaboration and innovation. We are continuing to review the situation with the well-being of InstaDeepers at the forefront of our minds.

Right to work: Please note that you will require the legal right to work in the location you are applying for.