



Overview

# Gurobi OptiMods

Data-Driven APIs for common optimization tasks

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# An OptiMod...



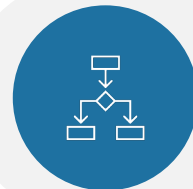
Is a tool to solve a specific, practical problem



Has a data-driven API for a common optimization problem, integrates with the greater Python ecosystem



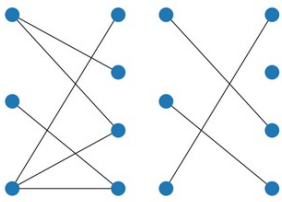
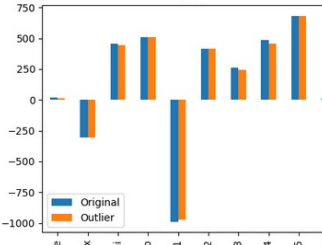
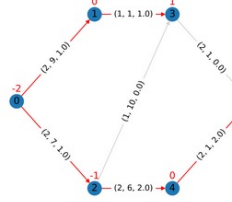
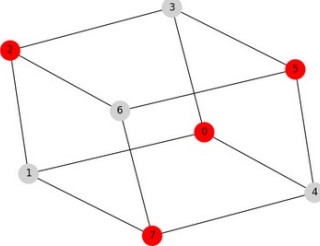
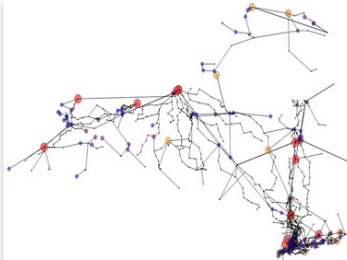
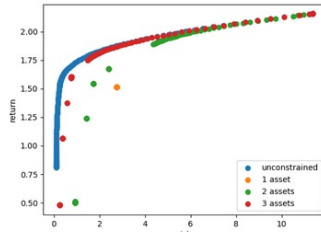
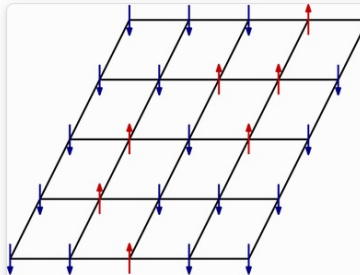
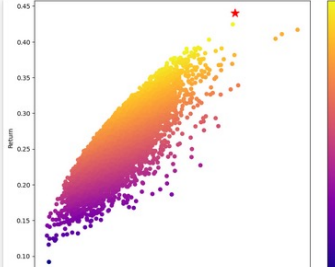
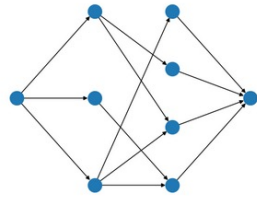
Takes data in “natural form”, returns a solution in “natural form”



Solves a mathematical optimization problem using Gurobi’s MIP technology without the need to dive into mathematical modeling



# First seed of Mods

		
<p><b>Maximum Bipartite Matching</b></p>	<p><b>Least Absolute Deviation Regression</b></p>	<p><b>Minimum-Cost Flow</b></p>
		
<p><b>Maximum Weighted Independent Set</b></p>	<p><b>Optimal Power Flow</b></p>	<p><b>Mean-Variance Portfolio</b></p>
		
<p><b>Quadratic Unconstrained Binary Optimization (QUBO)</b></p>	<p><b>Maximum Sharpe Ratio</b></p>	<p><b>Workforce Scheduling</b></p>



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The OptiMods Gallery

Contributing to OptiMods

Adding a new Mod

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API Reference

Developer Reference

License

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## Welcome to Gurobi OptiMods's documentation!

**Gurobi OptiMods:** nice APIs for common optimization tasks.

`gurobi-optimods` is an open-source Python repository of implemented optimization use cases using Gurobi, each with clear, informative, and pretty documentation that explains how to use it and the mathematical model behind it.

The package is a collection of independent 'Mods'. Each Mod is intended to be immediately applicable to real use cases. However, we expect that for many practical applications users will need to understand and extend the implementation of a Mod to tailor it to their use case. Read the [Usage](#) section first for an overview of the design and use case for the OptiMods.

Check out [The OptiMods Gallery](#) for a quick overview of the current set of implemented Mods. We welcome contributions of new Mods based on use cases you are interested in, as well as fixes and improvements to existing Mods. See [Contributing to OptiMods](#) and [Adding a new Mod](#) for more information on how to get involved in the project.

**Please note:** while this project is open source, the `gurobi.py` library that it depends on is commercial software and requires a license. See [License](#) for further details.

Next ➔

# Where to get it

- `pip install gurobi-optimods`
- [Documentation on Read the Docs](#)

# Example: Optimal mean- variance portfolios

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simonbowly	Fixes for scipy sparse handling (#106)	4f93d6c	12 hours ago	598 commits
.github	Use latest gurobipy in CI			2 weeks ago
docs	Copy editing for matching, regression, workforce (#105)			13 hours ago
src/gurobi_optimods	Fixes for scipy sparse handling (#106)			12 hours ago
tests	Rename min cost flow function			3 weeks ago
.gitignore	Ignore vim swap files			last month
.pre-commit-config.yaml	Bump black to 23.3.0			3 weeks ago
.readthedocs.yaml	Fix readthedocs.yaml pointer to sphinx conf.py			last year
CODE_OF_CONDUCT.md	Update code of conduct and readme			last month
CONTRIBUTING.md	Update docs links to point to stable			15 hours ago
LICENSE	Update LICENSE and NOTICE			last month
Makefile	Install all optional dependencies upon make develop (#...			5 days ago
NOTICE	Update LICENSE and NOTICE			last month
README.md	Update docs links to point to stable			15 hours ago
pyproject.toml	Require gurobipy>=10.0.1			2 weeks ago
tox.ini	Update tox config			7 months ago

README.md

pypi v1.0.1 python 3.8 | 3.9 | 3.10 | 3.11 tests passing docs passing

## gurobi-optimods: nice APIs for common optimization tasks

### About

Nice APIs for common optimization tasks

[gurobi-optimization-gurobi-optimods...](#)

optimization gurobi gurobipy

Readme Apache-2.0 license Code of conduct Activity 13 stars 4 watching 6 forks Report repository

Releases 4

Release v1.0.1 Latest 12 hours ago

+ 3 releases

Packages

No packages published Publish your first package

Contributors 8



# Gurobi/gurobi-optimods

- Apache 2.0 licensed
- Detailed contribution guideline
- Easy to get started
- Use issues, PRs as usual



# Thank You

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<https://github.com/Gurobi/gurobi-OptiMods>

<https://gurobi-optimization-gurobi-optimods.readthedocs-hosted.com/en/stable/index.html>