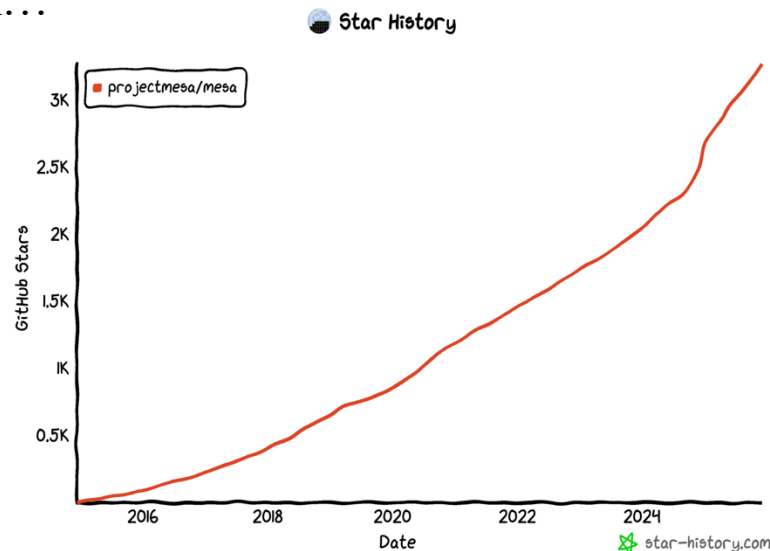# Mesa 项目介绍

Boyu Wang

2025.12.07

Mesa: Agent-Based Modeling in Python

- Open-source project created in 2014

- ~110k downloads per month (PyPI statistics as of Dec 2025)

- 600+ citations of three Mesa papers

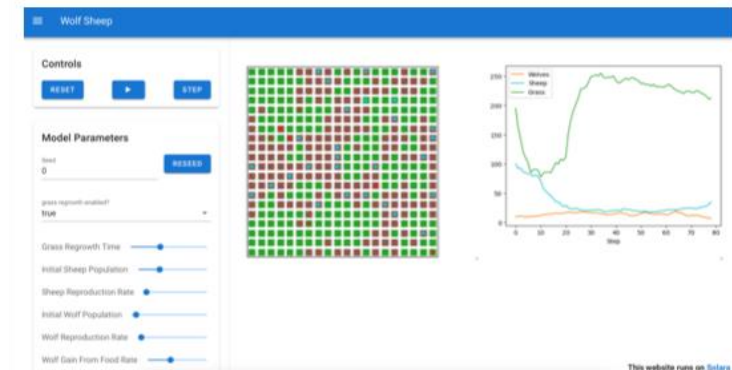- Used in various fields including health, energy, technical, biological, ecological…

其它 ABM 框架

Non-Python

- NetLogo https://ccl.northwestern.edu/netlogo

- Swarm https://www.swarm.org

- Repast https://repast.github.io

- MASON https://cs.gmu.edu/~eclab/projects/mason

- GAMA https://gama-platform.org

- AnyLogic https://www.anylogic.com

- Agents.jl https://juliadynamics.github.io/Agents.jl

- krABMaga https://krabmaga.github.io

Python

- Repast4Py https://repast.github.io/repast4py.site

- AgentPy https://agentpy.readthedocs.io

- PyCX https://github.com/hsayama/PyCX

- PyABM https://github.com/azvoleff/pyabm

- SimX https://github.com/sim-x/simx

- Melodie https://github.com/ABM4ALL/Melodie

Mesa 用户

- University at Buffalo
- TU Delft (Netherlands)
- University of Chicago
- University of Pisa (Italy)
- National Research Council of Italy
- Universidad Politécnica de Madrid (Spain)

- University of Illinois (Urbana)
- University of Mary Washington
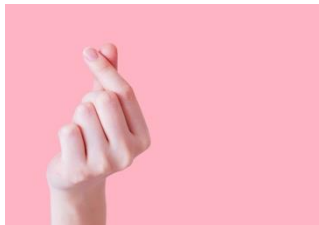- Mitre
- Princeton University
- George Mason University

> " … goal is to be a Python 3-based alternative to other popular frameworks based in other languages such as NetLogo, Repast, or MASON. …
>
> Masad, D., & Kazil, J. L. (2015, July). Mesa: An Agent-Based Modeling Framework. In SciPy (pp. 51-58). "

参与方式

NUMF⦿CUS

Small Development Grants[1]:
- 3 funding rounds per year
- 1 application per grant cycle
- max 2 grants per year
- up to $10k for each proposal
- prior involvement in the project required (?)

Google Summer of Code

- once per year for an open-source beginner or a student[2]
- small projects: 90 hours in 8-12 weeks, $900
- medium/large projects: 175/350 hours in 10-22 weeks (default 12 weeks), $1800/$3600

Google Season of Docs

- once per year for technical writers[3]
- $5k-$15k per project
- 5-30 hours per week, from April 10 to November 22 (2024)

[1] https://numfocus.org/programs/small-development-grants
[2] FAQ: https://developers.google.com/open-source/gsoc/faq
Contributor Stipends: https://developers.google.com/open-source/gsoc/help/student-stipends
[3] Google Season of Docs: https://developers.google.com/season-of-docs?hl=zh-cn

培训计划

第一阶段: 基础入门

- Mesa 框架入门
- 开源开发基础
- AI 辅助编程
- 模型实践进阶

第二阶段: 深度实践

- 空间模型实战
- 项目管理进阶
- 复杂网络上的多主体建模

第三阶段: 实践项目开发

- 社区参与与沟通
- GSoC 提案准备
- 真实项目实战

申请 GSoC 2026

Start NOW

- 提前了解 GSoC 项目与流程

- 提前和 Mentor 或社区沟通，获得反馈，迭代你的想法

- 有时间熟悉 Mesa / 其它开源项目的代码与贡献流程

- 可以先做一些 small but real contributions（修文档、加测试、修小 bug）

Useful Resources

- Mesa GSoC Candidates Guide:

  https://mesa.readthedocs.io/latest/GSoC.html

- Collection of accepted GSoC 2025 proposals:

  https://gsocguide.vercel.app

- Look beyond Mesa:

  - 找到你真正感兴趣的项目/领域/社区/技术栈（e.g., ABSESpy）

  - 不要只等这次培训的后续阶段，现在就开始调研与阅读代码

社区行为准则
Code of Conduct

https://github.com/projectmesa/mesa/blob/main/CODE_OF_CONDUCT.md

Mentors

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