

把蹦床体验变成看得见的数据

不用懂算法，也能看懂一次跳跃是不是稳定、是否跟上音乐、产品回弹是否适合不同人群。

Turn trampoline experience into visible data: stability, rhythm, music fit, and product adaptability in one simple view.

视频 / Video

手机、上传或目录批量
Camera, upload, or batch folder

动作 / Motion

识别身体骨架
Body skeleton tracking

节奏 / Rhythm

计算跳跃周期
Jump cycle timing

比较 / Compare

报告与横向对比
Reports and cross-video comparison

这不是普通视频播放器

Not just a video player

它的目标是把“感觉好不好跳”变成可以讨论、比较、复测的数据，让产品研发少靠猜，多看证据。

It turns “does it feel good to jump?” into evidence that teams can discuss, compare, and test again.

看见动作

自动画出身体骨架 Draw the body skeleton

软件会从视频中提取四肢和躯干动作，不做人脸识别，不显示面部关键点。

The software tracks limbs and torso motion without face recognition or face landmarks.

读懂节奏

识别每一次跳跃周期 Read every jump cycle

系统会判断起跳、落地、暂停和重新开始，统计跳跃次数、周期时长和稳定性。

It detects takeoff, landing, pauses, restarts, jump count, cycle duration, and rhythm stability.

评价产品

连接回弹设计和用户体验 Connect design to experience

通过周期、节拍、稳定性和用户反馈，帮助判断蹦床是否更容易跟上运动节奏。

Cycle timing, beat fit, stability, and feedback help explain whether the trampoline supports natural rhythm.

一条视频， 五步变成结论

One video, five steps to insight

非专业用户只需要记住：导入视频、跑分析、看报告。背后的复杂算法由软件完成。

For non-specialists: import videos, analyze, review reports. The software handles the complex motion analysis.

1

录制或导入 Record or import

可以用 iPhone 摄像头、浏览器录制、上传视频，或选择目录批量导入。
Use iPhone camera, browser recording, file upload, or batch folder import.

2

提取骨架 Track skeleton

每一帧找出肩、肘、腕、髌、膝、踝等身体关键点。
Find shoulders, elbows, wrists, hips, knees, and ankles frame by frame.

3

找到周期 Find cycles

根据人体上下运动判断完整跳跃、暂停和再次开始。
Identify complete jumps, pauses, and restarts from vertical body motion.

4

过滤异常 Filter noise

自动排除不完整、置信度低、明显离群的跳跃周期。
Remove incomplete, low-confidence, or outlier cycles from statistics.

5

输出报告 Export reports

生成叠加视频、双语 PDF、CSV 指标表和可追溯数据文件。
Create overlay video, bilingual PDF, CSV metrics, and traceable data files.

结果长什么样

What the result looks like

分析视频会带有骨架、动作说明、时序戳、跳跃状态栏和 TOPDMS 水印，便于团队一起复核。

The result video shows skeletons, action labels, timestamps, jump status, and the TOPDMS watermark for review.

次数 Count

这段测试一共跳了多少次，是否中途暂停。

How many jumps occurred, and whether motion paused.

周期 Cycle

每次跳跃从开始到结束用了多久，节奏是否一致。

How long each jump cycle lasts and whether rhythm is consistent.

合拍 Beat

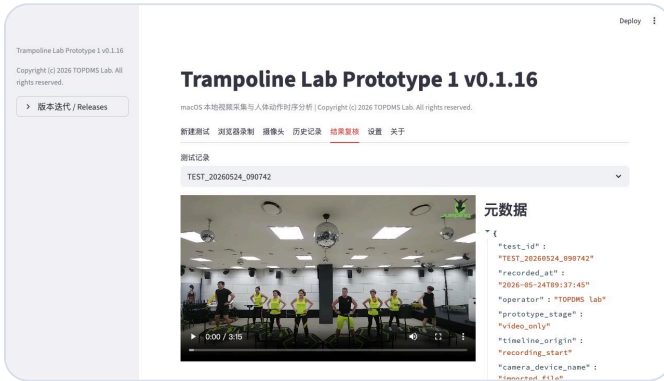
如果开启音乐节拍分析，可以判断跳跃是否跟上音乐。

With music analysis enabled, it checks jump timing against the beat.

评分 Score

把稳定性和节奏表现变成便于比较的分数。

Converts stability and rhythm into a comparison-friendly score.



界面保留三条路径：已有视频直接上传；现场测试用浏览器选择 iPhone 摄像头录制；多个视频可选择目录批量导入。

Use uploaded videos, browser recording with an iPhone camera, or folder-based batch import for multiple videos.

怎么操作

How to operate



新建测试：录入产品、用户、动作类型和备注，可上传单个视频，也可选择目录/多视频批量导入。

New Test: enter product, subject, action type, and notes; upload one video or batch import a folder/multiple videos.



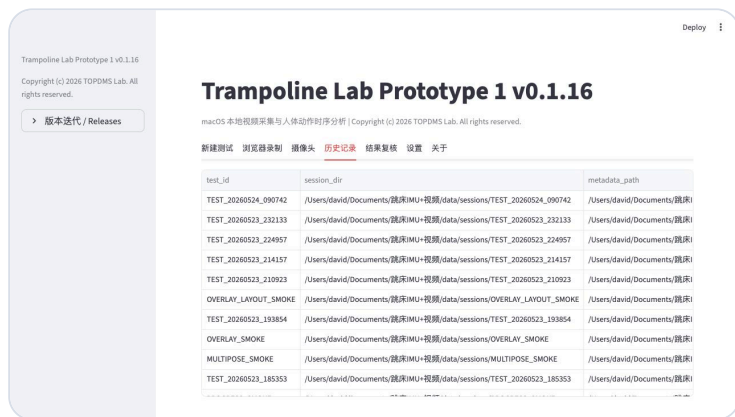
浏览器录制：适合使用 iPhone 连续互通相机进行现场采集。

Browser Recording: useful for iPhone Continuity Camera capture.



设置：选择单人或团队、速度或准确优先、节拍分析和异常过滤。

Settings: choose single/team mode, speed/accuracy, beat analysis, and anomaly filtering.



历史记录：保存独立测试项目和横向比较项目，可重新下载比较 PDF 与 CSV。

History: keep sessions and comparison projects, then re-download comparison PDF and CSV files.

多个视频怎样比较

How multiple videos are compared

当你把一个目录里的多个测试视频放在一起，软件可以选择分别建项目，也可以生成一个横向比较项目。
When several test videos are in one folder, the software can create separate sessions or one cross-video comparison project.

批量导入

浏览目录或多选视频

Folder or multi-file import

支持扫描本机目录、浏览选择目录，或一次选择多个视频文件，减少重复录入。

Scan a local folder, choose a directory in the browser, or select multiple video files at once.

两种创建

独立项目或合并比较

Separate or combined

每条视频都会保留独立测试项目；合并模式会额外生成横向比较项目。

Each video remains traceable as its own session; combined mode adds a comparison project.

报告输出

PDF 和 CSV 指标表

PDF and CSV metrics

比较报告汇总稳定性、平均周期、节奏波动、合拍评分和姿态检测率，便于分享和复盘。

The report summarizes stability, average cycle, rhythm variation, beat-fit score, and pose detection rate.

它对研发有什么意义

Why it matters for R&D

蹦床不是只看“弹不弹”，而是看不同人能不能轻松形成稳定节奏，能不能适配音乐和课程动作。

A trampoline is not only about bounce. The key is whether different users can build stable rhythm and fit class movement.

比较不同蹦床样品

Compare product samples

同样动作、同样音乐下，用横向比较报告对比平均周期、节奏波动、合拍评分和稳定性评分。

Use the comparison report to compare average cycle time, rhythm variation, beat-fit score, and stability score under the same test.

支持小型健身蹦床测试

Support mini fitness trampoline tests

判断回弹节奏是否容易跟上音乐，为材料、弹簧和结构设计提供反馈。

Evaluate whether rebound rhythm helps users follow music, then feed that back into material and structure design.

支持团队课程场景

Support group class scenarios

团队模式最多 8 人，用不同颜色骨架区分成员，观察不同体型用户的适应性。

Team mode supports up to 8 people and uses different skeleton colors to observe adaptability.

为 IMU 融合做基础

Prepare for IMU fusion

未来可把视频事件与传感器数据放在同一时间轴上，解释“身体动作”和“产品回弹”的关系。

Future video events and IMU streams can share one timeline to explain body motion and trampoline response.

一句话讲原理

The principle in one sentence

软件先看见身体，再读出节奏，最后把节奏和产品体验连接起来。

The software sees the body, reads the rhythm, and connects rhythm to product experience.

非技术版解释

Plain-language explanation

视频里的人每一帧都有一个身体骨架。软件观察骨架上下运动，就能知道什么时候起跳、什么时候落地、一次完整跳跃用了多久。

Each video frame contains a body skeleton. By watching vertical skeleton motion, the software detects takeoff, landing, and complete jump duration.

如果有音乐，软件再去听音乐里的节拍，把跳跃落点和节拍做比较。越合拍，说明这个蹦床更容易让用户进入运动节奏。

If music is enabled, it detects beats and compares jump timing against them. Better fit means the trampoline may help users enter rhythm more naturally.

异常过滤会自动去掉停顿、不完整动作和明显不可靠的周期，让统计结果更像真实产品表现。

Adaptive filtering removes pauses, incomplete actions, and unreliable cycles so the statistics better reflect real product behavior.



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This page and exported PDF are for product R&D communication, customer demos, and internal training. The team trampoline hero image is original visual material prepared for the TOPDMS Lab project guide.



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This quick guide helps non-specialists understand the software value. Formal R&D conclusions should combine raw video, structured data, IMU data, and user feedback.