



China International College Students' Innovation Competition 2025



Echoes from

湘 迹 智 传

HUNAN

AI-Enhanced Cultural Tourism Innovation Project

项目负责人：马柏

Project Leader: Bai Ma

参赛组别：研究生创意组

Category: Postgraduate Idea Stage

参赛院校：

Participating University:



合作院校：

Orating University:



Confirmation of qualification

资格确认

Team Leader **Bai Ma** is a Master of Digital Asset and Media Management from **King's College London**.

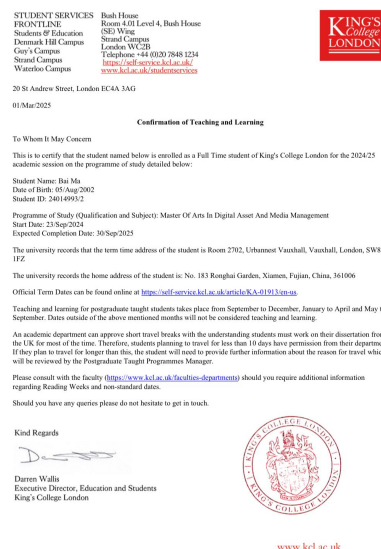
团队负责人**马柏**是就读于**伦敦国王学院**的数字资产与媒体管理硕士

The three team members are from King's College London and the University of Sheffield.
三位团队成员分别来自伦敦国王学院和谢菲尔德大学



King's College London
伦敦国王学院

2026 QS world ranking
31st
2026QS排名世界第31



The University of Sheffield
谢菲尔德大学

2026 QS world ranking
92nd
2026QS排名世界第92

Team Leader

团队负责人



Bai Ma 马柏

MA In Digital Asset And Media Management

伦敦国王学院数字资产与媒体管理硕士

GPA: 3.8+ | Academic Honors: Top 1st Class

- **Best Sound Design**, 19th World Ethnic Film Festival (USA)
第 19 届世界民族电影节 (美国) 最佳音效设计奖
- **Best Student-Sound Short Film**, 2020 Universe Multicultural Film Festival
2020 环球多元文化电影节最佳学生声音短片
- Produced & hosted **40+** episodes at Hunan TV International Channel
湖南卫视国际频道制作并主持节目 40 余期
- Developed **30+** strategic proposals at National Radio and Television Administration Smart Media Lab
智能媒体创新实验室战略提案 30 余个

Market Demand

市场需求

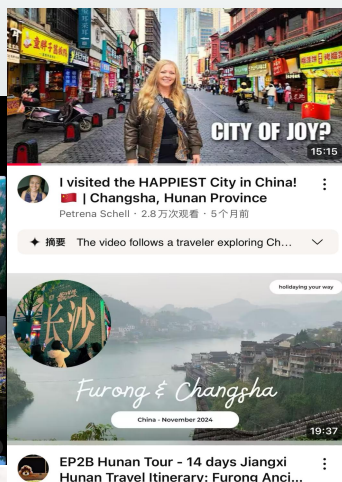
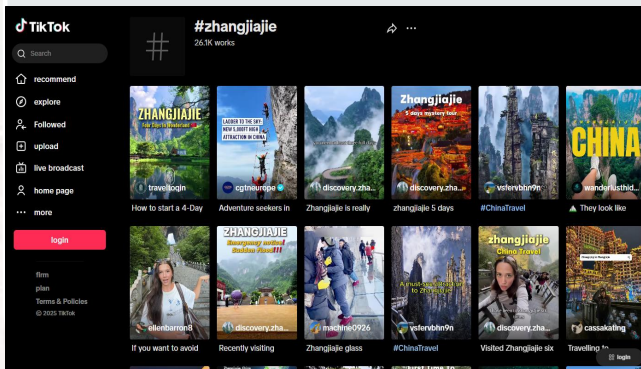
Tourism heats up as China opens **unilateral visa-free** access to 50 countries starting from 2023

自2023年起，中国陆续对**50**个国家开放**单方面免签**，旅游业升温

Hunan Tourism's Going Viral 湖南旅行的走红

As of July 2025, the topic 'Zhangjiajie' has received **over 26k** engagements on tiktok alone, and a large number of bloggers have posted Hunan travel videos on YouTube.

截至2025年7月，仅“张家界”这一话题就在tiktok获**超2.6万**参与，大量博主在YouTube发布湖南旅行视频。



A New Window for Global Collaboration 国际合作新契机

In April 2025, Hunan Literature and Tourism held a promotion meeting in London, UK, which gained the attention of international professional tourism media. It is now a strategic window for **official mobilisation** and **international cooperation** to promote the **internationalisation of Hunan Culture and Tourism**.

2025年4月，湖南文旅在英国伦敦举办推介会，获得国际专业旅游媒体关注。目前正是**官方动员、国际合作**，推动**湖南文旅国际化**的战略窗口期。

Hunan Province showcased in London with cultural extravaganza and tourism drive

Travel · 21:58, 04-Apr-2025

CGTN

以下国家持普通护照人员可免签入境中国（持续更新）：

大陆	国家
欧洲	德国、安道尔、奥地利、比利时、保加利亚、塞浦路斯、克罗地亚、丹麦、斯洛伐克、斯洛文尼亚、西班牙、爱沙尼亚、芬兰、法国、希腊、匈牙利、爱尔兰、冰岛、意大利、拉脱维亚、列支敦士登、卢森堡、北马其顿、马耳他、黑山、摩纳哥、挪威、荷兰、波兰、葡萄牙、罗马尼亚、瑞士
亚太地区	文莱、韩国、日本、马来西亚、新加坡、沙特阿拉伯、阿曼、科威特、巴林（此四国自2025年6月9日起可免签入境）
大洋洲	澳大利亚、新西兰
南美洲	阿根廷、巴西、智利、秘鲁、乌拉圭（此五国自2025年6月1日起可免签入境）

(List of unilateral visa-free countries, 2025)

Market Pain Points

市场痛点

Difficulties for foreign travellers visiting Hunan's humanistic attractions

外国旅客游览湖南人文景点困难重重

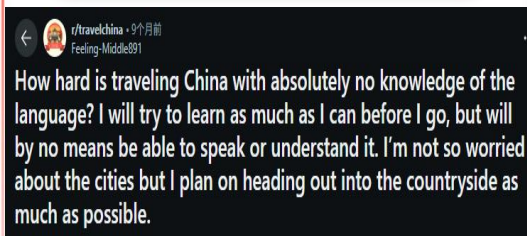
lack of interest
缺乏兴趣



Because of the **cultural distance**, most foreign tourists do not know much about Hunan culture and **prefer natural landscapes**.

因为文化距离远，大多数外国游客对湖南文化并不了解，更倾向选择自然景观。

language barrier
语言障碍



Hunan lacks guides in English, and even the central city of Changsha has only about **35% English coverage** of introductions to major scenic spots.

湖南缺少英语导览，即使是中心城市长沙，主要景区介绍英文覆盖率也仅约**35%**。

Dispersed attractions
景点分散



As of today (2025), the number of identified immovable cultural relics in Hunan Province is **over 30,000**, widely distributed in **14 cities and states**. Tourists cannot visit them in a centralised manner.

截至目前（2025年），湖南省已经查明的不可移动文物数量为超过3万处，广泛分布于14个市州。游客无法集中参观。

Market Positioning

市场定位

Our Goal 项目目标

Breaking down barriers with **immersive cultural experiences** that evoke **emotional resonance** around the world.
以沉浸式文化体验打破壁垒，唤起世界情感共鸣

Target user group 目标用户群

Overseas cultural travellers
海外文旅爱好者

People who love **Chinese culture and history** but seek **new experiences**
喜爱中国文化历史但追求新鲜体验的人群

Educational Institutions / Study Tour Market
教育机构/研学旅行市场

Differentiated positioning of existing projects 差异化定位

The success of intelligent cultural tourism cases such as Palace Museum "digital tour guide" (故宫数字导游) and The British Museum x Smartify (大英博物馆与AI导览应用 Smartify 合作)

↓

Serious homogenisation. (**voice explanation, code scanning** and **map reading**, and the **content is templated.**)
国内外景区纷纷模仿成功案例制作智能导览，导致同质化严重，很多项目停留在语音讲解、扫码识图，内容模板化。

Aimed at **overseas travellers**, this project solves the pain points of traditional cultural tourism such as **single content, outdated explanation mode** and **weak cross-language communication power** through AI-driven immersive cultural experience.

本项目面向海外旅客，通过AI驱动的沉浸式文化体验，解决传统文旅内容单一、讲解模式陈旧、跨语种传播力弱等痛点。

Project Introduction

项目介绍

'Echoes from Hunan' project develops the following **2 core businesses**
湘迹智传项目主要开发以下两项业务

Introducing **AI** technology to major **humanistic tourist attractions** to address language and background knowledge barriers

在各大**人文旅游景区**内引入**AI**技术,解决语言和背景知识障碍

Creating China's first AI-enabled private non-government organisation for the development of Hunan spirituality.

建立中国首个AI赋能湖湘精神发展的民非组织



Helping scenic spots to build a **publicity model** to bring culture and geography closer together with information dissemination

助力景区构建**宣传模式**,以信息传播拉近文化与地理的距离

30,000 words of research materials as a guarantee
3万字国内外调研资料作保障

insightful
有深度

Dialogue with digital celebrities across time and space
与数字名人跨时空对话

effective
有实效

Creating Short Historical Storytelling Dramas
打造历史故事短剧

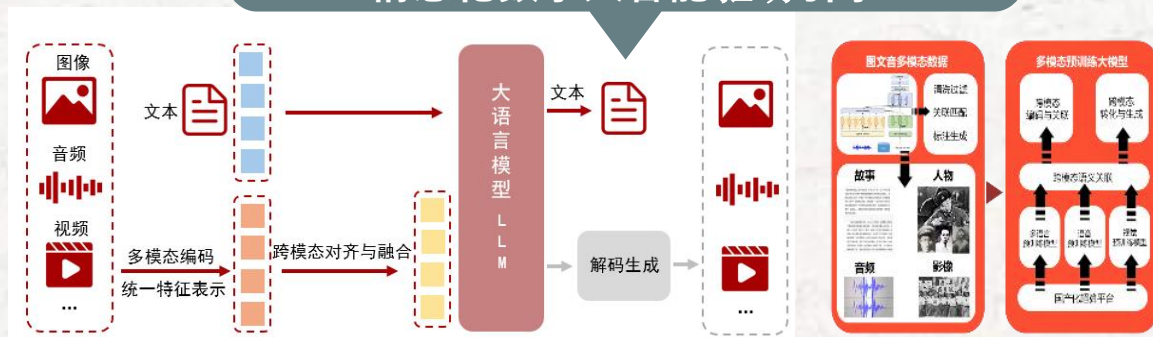
attractive
有吸引力

Project Highlights 1

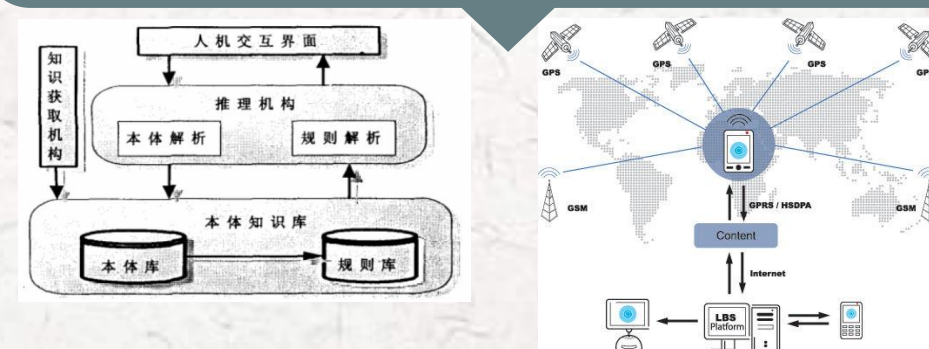
项目亮点1

Use of multimodal AI big model base, forming **3 core technologies**
运用多模态AI大模型基座，形成三大核心技术

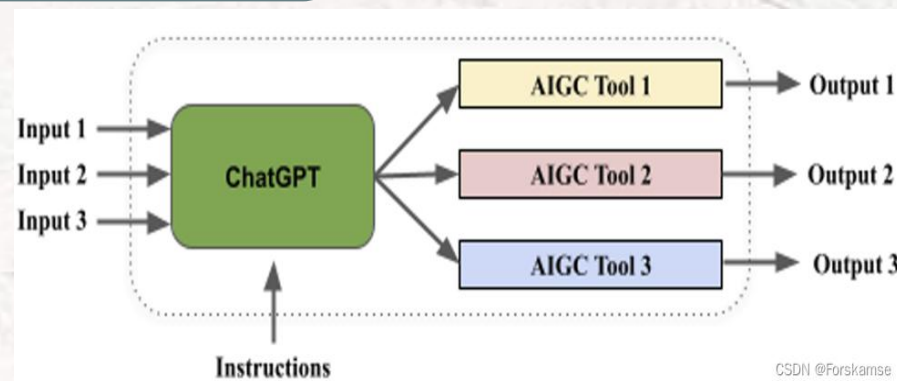
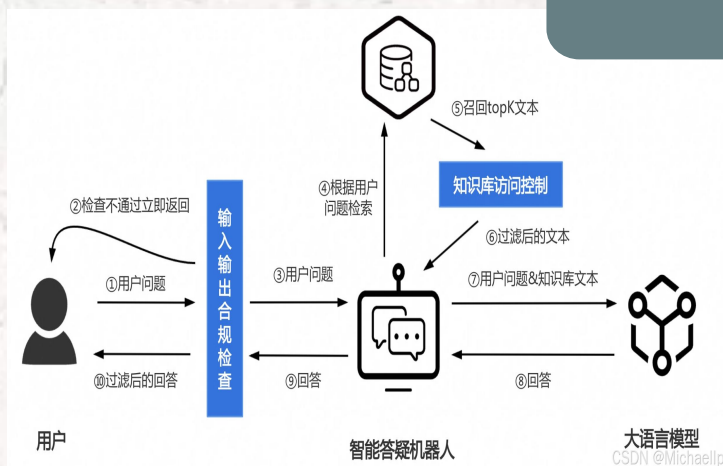
Emotional Digital Human Intelligence Drive Engine 情感化数字人智能驱动引擎



AI human-machine co-ordinated interaction system AI人机协调交互系统



AIGC Narrative Paradigm Integration AIGC叙事范式集成



Core technology 1 核心技术1

Emotional Digital Human Intelligence Drive Engine

情感化数字人智能驱动引擎

Background 技术开发背景

Demand for virtual human market is increasing year by year
虚拟人市场需求逐年增高



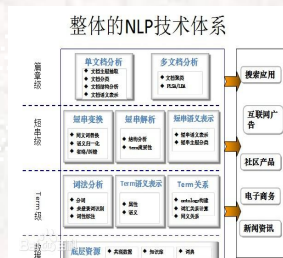
Virtual humans drive market size(billions)
虚拟人带动市场规模

Virtual human core market size(billions)
虚拟人核心市场规模

Driving year-on-year market size growth
带动市场规模同比增长率

Core market size year-on-year growth rate
核心市场规模同比增长率

Natural language processing (NLP)
自然语言处理



Using NLP Models
使用NLP模型

Extract entities and relationships from the literature and combine them with a rule engine to improve accuracy.
从文献中抽取实体和关系，结合规则引擎提升准确率。



Adding entity information to the pre-training phase for domain adaptation training.
在预训练阶段注入实体信息,进行领域自适应训练.

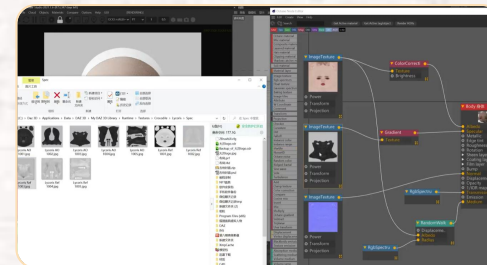
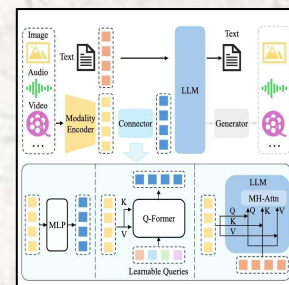
Large model personification
大模型拟人化

Knowledge graph visualisation
知识图谱可视化

Reinforcing the typical narrative paradigm through RLHF
通过RLHF强化典型叙事范式

Multi-Perspective + Dialect Narrative
多视角+方言叙事

Technical points 技术要点

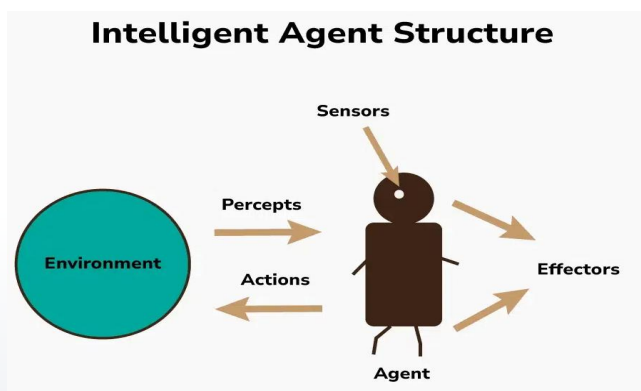


Core technology 2

核心技术2

AI human-machine co-ordinated interaction system AI人机协调交互系统

Agent intelligent body



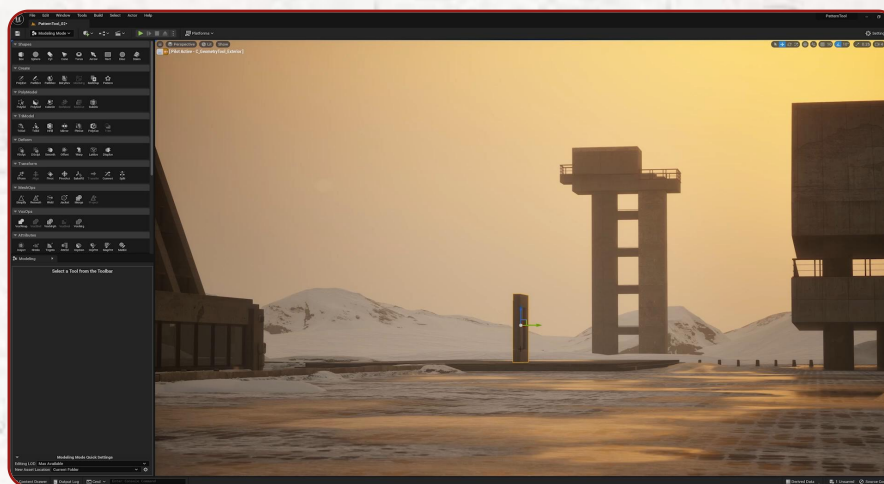
Support **natural language** Q&A, **multi-language virtual tour**, embedded with **emotion calculation module**, **recognising user's emotion** and adjusting the explanation style.

支持自然语言问答、多语言虚拟导览，嵌入情感计算模块，识别用户情绪并调整讲解风格



Combined with **LBS** (Location Based Services), it provides AR tours to enhance the interactive experience and supports intelligent generation and driving of actions to provide users with an immersive visual experience.

结合LBS（基于位置的服务），提供AR导览，增强互动体验，并支持动作的智能生成和驱动，为用户提供沉浸式的视觉体验



Human research information to generate a **database** and AI technology to assist in its operation

人力调研资料生成数据库，AI技术辅助运行
左侧视频为数据库操作过程。

Core technology 3

核心技术3

AIGC Narrative Paradigm Integration AIGC叙事范式集成

Story Generation 故事生成

- Selection of Qwen, DeepSeek family of models for domain adaptation.
选用Qwen、DeepSeek系列模型进行领域适配
- Building a corpus of 100,000 Huxiang stories.
构建10万条湖湘故事语料

AI knowledge graph AI知识图谱

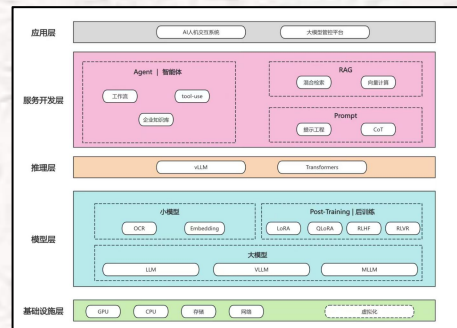
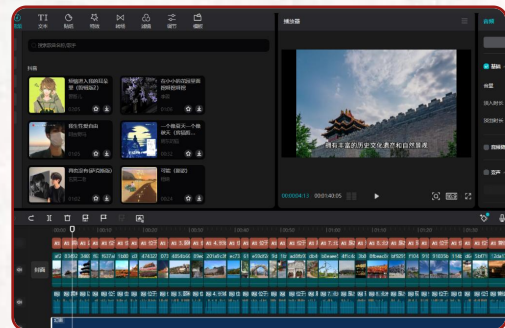
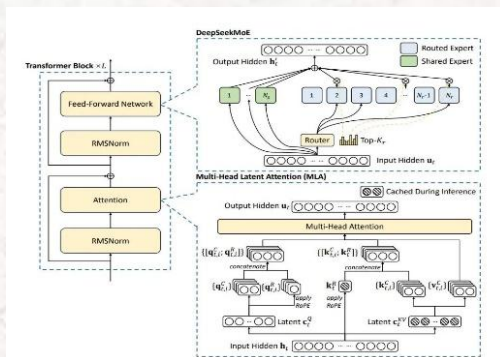
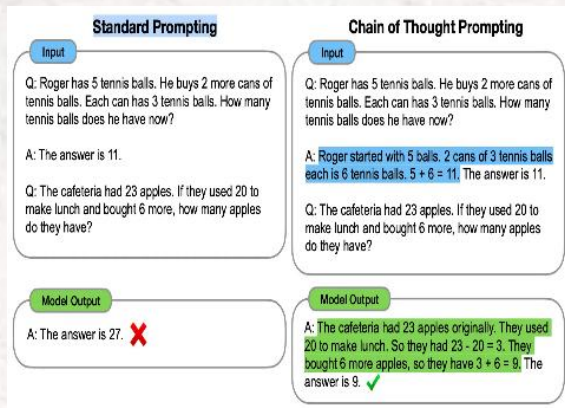
Constructing Huxiang Knowledge Graph . Combining multimodal AI technologies such as target detection, OCR, and speech recognition to extract structured knowledge from unstructured data such as images, videos, and audios.
构建湖湘知识图谱.结合目标检测、OCR、语音识别等多模态AI技术。

CoT Tips Project CoT提示工程

Involves prompting a language model with questions and then guiding it to generate a chain of thought: a series of intermediate reasoning steps leading to a final answer. An example is the dynamic generation of virtual tours.
涉及用问题提示语言模型，然后引导其生成一条思维链：一系列导致最终答案的中间推理步骤。例如虚拟导览动态生成。

Topic Logical Reasoning 题材逻辑推理

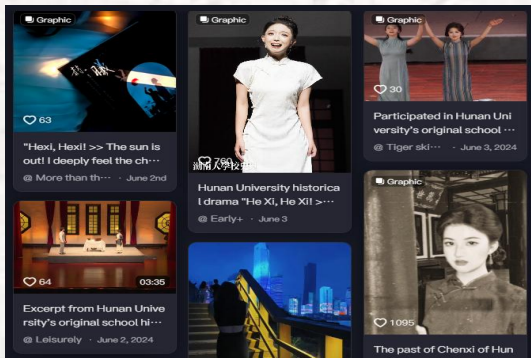
The AI review mechanism ensures that the Knowledge content output from the Big Model complies with policy requirements and avoids erroneous or sensitive information.
通过AI审核机制，确保大模型输出的知识内容符合政策要求，避免错误或敏感信息。



Project Highlights 2

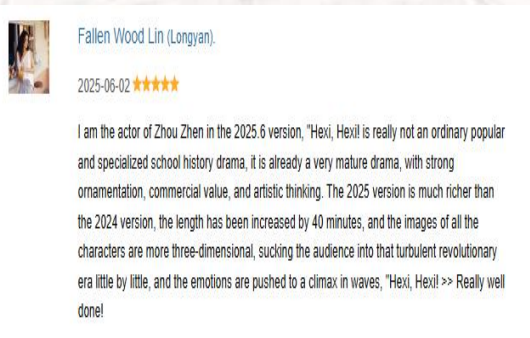
项目亮点2

Using the power of **social media communication**, telling history as a **story**
运用社交媒体传播力，把历史讲成故事



Filming and staging,
adaptable to **a wide range of theatre formats**

拍摄、舞台演出，可适应多种剧目形式



Assisting the cast and crew to promote the film on both **Chinese and English platforms**.

协助剧组在中英文平台进行宣发造势



Participation in **home and abroad** to create works of interest to both Chinese and foreigners.

海内外共同参与，创作中外都有兴趣的作品

Online Promotion
线上推广

Participation in the
creation
参与创排

Original Script
原创剧本

Project Patents

项目专利

5 Software Copyright Registration+2 patents, protecting the project 五项软著、两项专利，为项目保驾护航



5 Software Copyright Registrati on

- Wifi based smart attraction applet software
基于wifi的智慧景点小程序软件 2021SR0567124
- CNN-based Image Intelligent Recognition System
基于CNN的图像智能识别系统 2021SR1043291
- Content optimisation system based on educational Feed streams
基于教育Feed流的内容优化系统 2021SR0461614
- Image classification system based on deep feature fusion
基于深度特征融合的图像分类系统 2021SR1043290
- Science and Technology Big Data Resource Fusion and Evolution
Analysis System Platform
科技大数据资源融合及演化分析系统平台 2021SR0531930

2 patents

- A cross-modal text-video retrieval
method based on spatio-temporal
relationship enhancement
一种基于时空关系增强的跨模态文本-视频
检索方法 2021113122331
- An image retrieval and classification
method based on deep CNN features
一种基于深度 CNN 特征的图像检索和分
类方法 2021106293650

Project preparation history 项目筹备历程

Overseas Information Collection 海外信息收集

Cultural Tourism Case Experience 文旅案例学习



Coupling Mechanisms and Development Patterns of Revitalizing Intangible Cultural Heritage by Integrating Cultural Tourism: The Case of Hunan Province, China

by Chuanchuan Yuan 1,2*, Li Gan 3 and Huihui Zhuo 4

1 School of Art, Soochow University, Suzhou 215123, China

2 School of Art and Design, Shaoyang University, Shaoyang 422000, China

3 School of Design, NingboTech University, Ningbo 315000, China

4 School of Software, Hunan Vocational College of Sciences and Technology, Changsha 410004, China

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Sustainability 2022, 14(12), 6994; <https://doi.org/10.3390/su14126994>

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(This article belongs to the Special Issue Sustainable Tourism and Cultural Heritage)

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Abstract

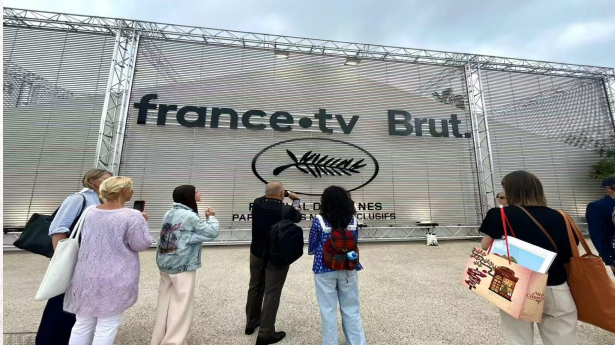
The integration of the cultural/creative and tourism industries is one way to present different types of regional cultural heritage to the world. This study examined the coupling of intangible cultural heritage and cultural tourism development in Hunan, seeking a pattern for the development of the former under the latter. The study included analyzing the coupling between tourism resources and ICH and exploring modes of revitalizing or developing ICH in the context of cultural tourism. We used methods of GIS spatial technology, including nearest neighbor indexing, kernel density estimation, and queuing analysis, to estimate the kernel density of a buffer of points (high-speed railway stations, and 5A and 4A scenic spots) and lines (high-speed railways and highways). The results show (1) the overall spatial aggregation of Hunan's ICH resources; (2) how tourist attractions drive ICH resources, as illustrated by the coupling between the spatial distribution of 24A attractions and ICH; and (3) the pattern of high-speed road and

Transnational group meeting 国际学生交流会



Technical & Theoretical Guidance 技术与理论指导

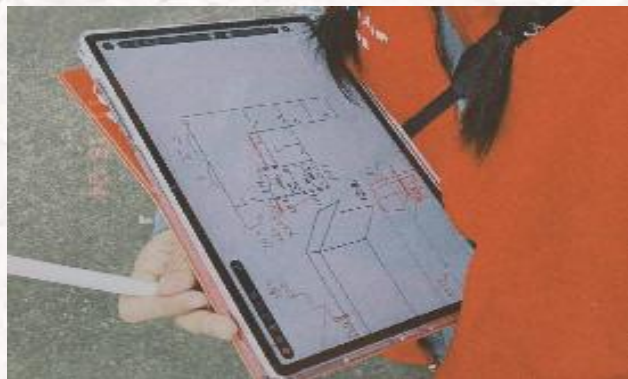
investigative interview 采访调查



Project preparation history 项目筹备历程

Field research in Hunan 湖南实地调研

video recording
影像记录

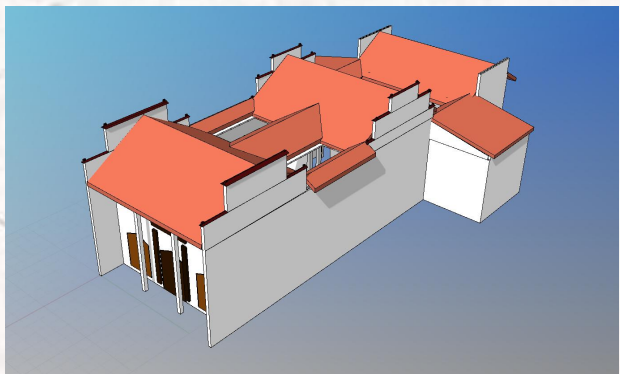


Site building
mapping
场地建筑测绘



Scenic co-
operation
景区合作

Invite overseas
friends
邀请海外友人体验



Practical Case 1

实践案例1

Hesen Cai Digital human: For interactive experiences and short animated films

蔡和森数字人: 用于现场互动体验和拍摄动画短片

Step 1

Selected **Cai Hesen, a cultural celebrity in Hunan region**, as a prototype. And the scenes in the short **film** were shot on location first. 选定湖南地区文化名人蔡和森为原型。并对短片中进行互动的场景和真人实地拍摄。



Step 2



Modelling from historical photographs
根据历史照片进行建模



Step 3

Synthesis of **interactive short films**
合成互动短片
下方视频为数字人与真实人物和场景互动效果



Practical Case 2

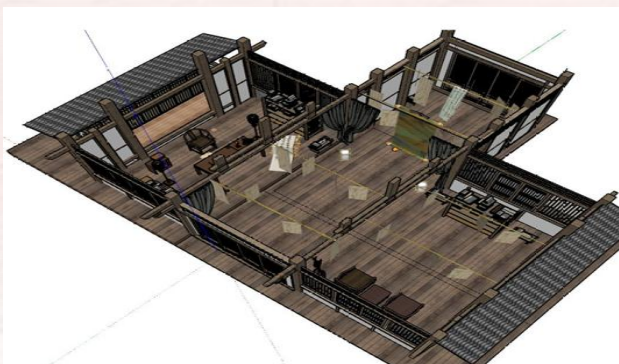
实践案例2

Cloud Exhibition: Breaking the distance limit,
designing online tours for overseas travellers
云展馆：打破距离限制，为海外游客设计线上游览

In November 2023, Digital Intelligence
Cultural Tourism and Tianxin Ge
collaborated to create an **online digital
cultural experience hall**.

2023年11月，“数智文旅”与天心阁合作
打造线上数字文化体验馆

Numerical Intelligence Huxiang Exhibition 数智湖湘馆



Exploring the development of Hunan
culture with unique **digital interactive
game**.

数智湖湘馆用独特的**数字互动玩法**引导游客
探索湖湘文化的发展历程

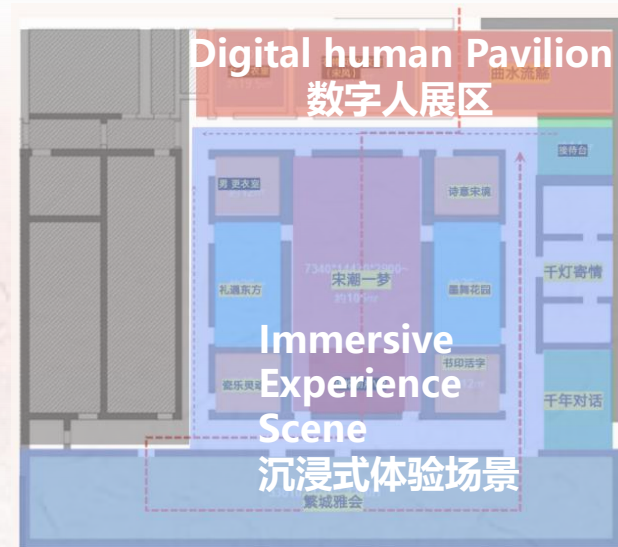


4 exhibition area
展区

1 digital person
数字人

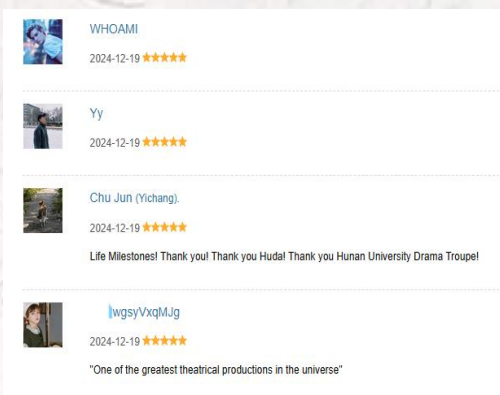
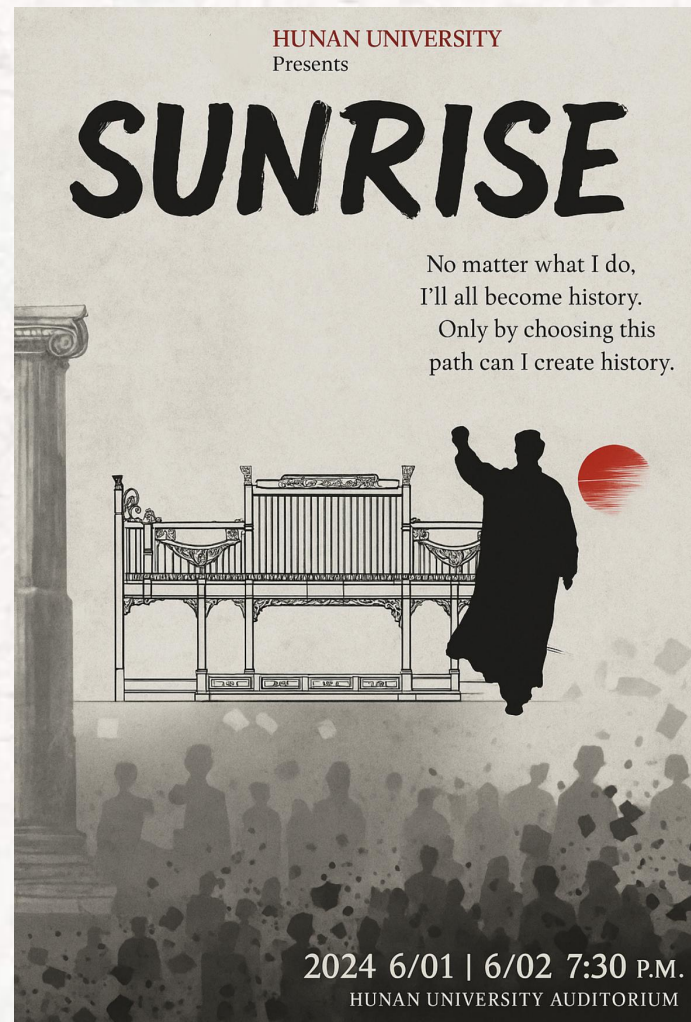
8 Experience Scene
沉浸式体验场景

Selected artefacts from Hunan's 50 years
of history during the late Qing era
精选文物展陈湖南的晚清中兴五十年历史。



《赫曦，赫曦》 (*Sunrise*)

- **500W+** total plays on all video platforms
各平台播放总量500w +
- Ranked among the platform's **top searches**
跻身平台热搜榜
- Users invest more than **80%** of their viewing time
用户实际投入观看时间超80%
- Headline platforms account for **60%** of the heat list
头部平台占比热力榜60%



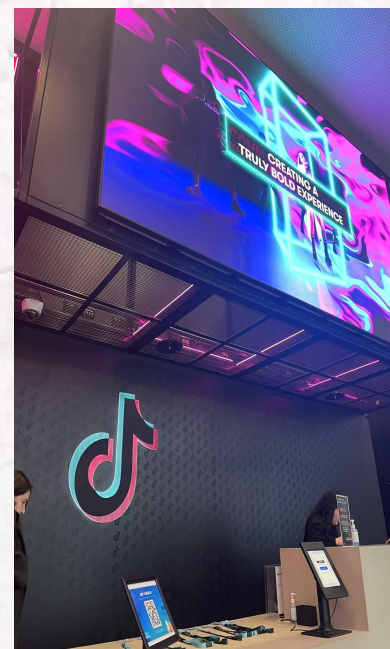
Project replicability

项目可推广性



137 media companies - audiobook recording, voice-overs for adverts

137家 传媒企业 —— 有声书录制、广告配音

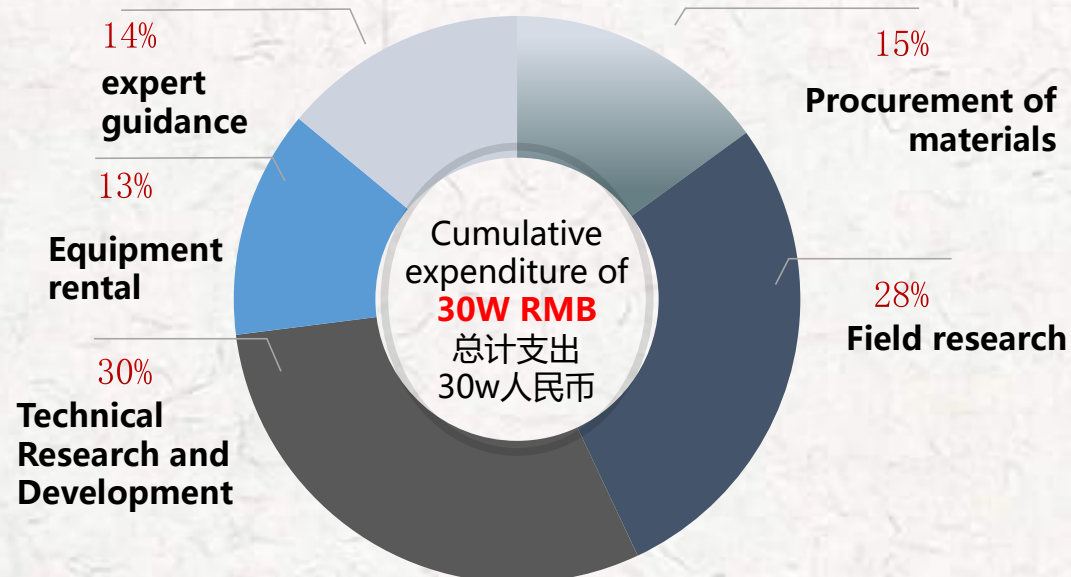


Collaboration with TikTok, live promotion on both overseas and Chinese platforms
合作TikTok，同时在海外和中国平台直播宣发

Funds management

资金管理

Fund Use 资金使用



Technical Research and Development
技术研发
9W

Field research
实地调研
8.4W

Procurement of materials
物资采购
4.5W

expert guidance
专家指导
4.2W

Equipment rental
设备租借
3.9W

Current cumulative funds are roughly **in line** with expenditures
当前累计资金与开销基本持平

Future goals to start **making a profit**
未来目标开始进行营利

Source of funds 资金来源

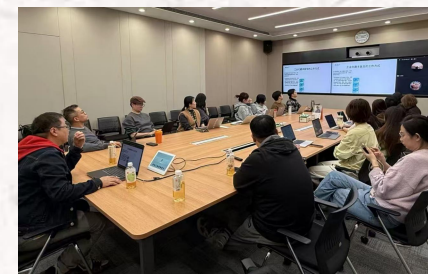
63.27% Funded by Hunan University Overseas Alumni Foundation
湖南大学海外校友基金会资助



Support for innovation and entrepreneurship

36.73% Domestic and International Customised services
定制服务

- Physical product: Digital Human Series
实体产品：数字人系列
- Online services: digital technology guidance
线上服务：数字技术指导
- Programme design: provision of cultural communication proposals
方案设计：提供文化传播提案



Team members 团队成员



Bai Ma 马柏

MA In Digital Asset And Media
Management, King's College London
伦敦国王学院数字资产与媒体管理硕士
Project initiator 项目发起人
Responsible for project promotion
and international co-operation
负责项目推广与国际合作



Taneesha paranjape

LL.M. in International Financial
Law, King's College London
伦敦国王学院国际金融法硕士
Team Legal Advisor 团队法律顾问



Binghong Dong 董炳宏

MA In Politics and Media in East
Asia, The University Of Sheffield
谢菲尔德大学东亚政治与媒体硕士
Project core members 项目核心成员
Cultural content creators
文化内容创意人



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MSc Advanced Computing, King's
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伦敦国王学院高级计算机硕士
Team Technical Manager
团队技术总监

Mentoring Team

指导团队



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伦敦国王学院数媒与文化讲师

PhD at the Centre for Critical Theory

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Director of Innovation Research

Institute, National Supercomputing

Centre Changsha

国家超算长沙中心创新研究院院长



Zhe Wang 王哲

Associate Professor of Journalism and
Communication, Hunan University

湖南大学新闻与传播学院副教授

Co-operation resources

合作资源

We have ——
我们拥有

Rich talent pool
丰富的人才储备

Attracting overseas students
interested in Chinese culture
to **join the team** on their
own initiative
吸引对中国文化感兴趣的海外学
子主动加入团队



Hi 🙋 I heard you're currently
working on a tourism development
project in China and are looking for
a legal advisor. I'm really interested
—could you tell me more about it?

17:26

Sure, it's a project about Hunan's
culture and the application of smart
technologies.

17:27

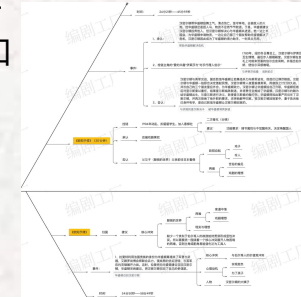


Ghosts City is a professional film
and television production company
offering a wide range of co-
production services for film and
television projects and crews from
all over the world.
法国Ghosts City 是一家专业影视制片
公司，为来自全世界各地的影视项目和
摄制团队提供多元化的协拍服务。



The company's production 'The Long Night' was
selected as a finalist in the Official Main
Competition of the **36th Angers Film Festival**
(France).
公司出品《长夜》入围第36届法国昂热电影节短片官
方主竞赛

Professional guidance on
cultural communication
专业的文化传播指导



**Beijing Tuogu Culture
Media Company** Limited
offers to organise
cultural and artistic
exchange activities.
北京拓谷文化传媒有限公司
提供组织文化艺术交流活动



2018 Produced play 'Talk
Show Boy' won Best
Screenplay at the **San Diego
Children's Film Festival,
USA.**

2018 年制片剧目《脱口秀 boy》
获美国圣地亚哥儿童电影节最
佳编剧奖。

Promote intercultural exchange

推动跨文化交流

Dedicated to cooperation in **study tours for overseas students**
致力于海外学生研学旅行合作



Meeting with the administrators of Wetherby Senior School, Francis Holland School, School Pupil Admissions and other UK primary and secondary schools to **promote cultural dissemination through education.**

与多名英国中小学管理者会面，用教育推动文化传播

Enhancing **national soft power**
提升国家软实力



Exchange with young entrepreneurs from around the world to **showcase and promote national culture**

与世界各地青年创业者交流，展示和弘扬民族文化

Creating a **internationalised and diversified Hunan**
打造国际化、多元化的湖南



Feeding Hunan with overseas resources, creating a more **modern, accessible and enriched** international image for hometown.
用海外资源反哺湖南，为家乡打造更现代、更方便、更丰富的国际形象

Future Plan

未来规划

Increased level of
digitisation

数字化水平提高

2025-2026

- Focus on newer iterations of AI technology
关注AI技术更新迭代
- Publicity focus shifts to overseas social media platforms
宣传重心转移到海外社交媒体平台

Expansion of
dissemination

传播面扩大

2026-2028

- Co-operate with travel agents for product promotion
合作旅行社
- Formation of an independent AI cultural tourism brand
形成独立AI文旅品牌

AI Cultural Tourism
Model Improved and
Promoted

AI文旅模式完善推广

2028-2035

- Further dissemination of standardised and improved AI cultural tourism systems across the country
进一步将标准和完善的AI文旅系统推广全国



China International College Students' Innovation Competition 2025



Echoes from

AI-Enhanced Cultural Tourism Innovation Project

HUNAN

项目负责人：马柏

Project Leader: Bai Ma

参赛组别：研究生创意组

Category: Postgraduate Idea Stage

参赛院校：

Participating University:



合作院校：

Orating University:



University of
Sheffield