ESOMAR’s AI 20 by AdEff

A. Company Profile

1. What experience and know-how does your company have in providing AI-based solutions for research?

MiningLamp Technology is an enterprise-level data analysis and artificial intelligence company with eight years of experience in AI product and technology development. We help businesses transform vast and complex data into actionable intelligence, empowering operational decision-making and innovation.

- Serving over 2,000 leading enterprises globally across various industries such as consumer goods, finance, manufacturing, and catering.
- Miaozhen Systems is a leading marketing intelligence application software in China, with a customer renewal rate and project win rate both exceeding 90%.
- Capable of independent development, fine-tuning, and full-cycle training of proprietary large language models. Our self-developed HyperGraph multi-modal large language model, based on a neuromarketing database, received a Best Paper Nomination at ACMMM 2024 (a CCF-A conference).
- Leveraging comprehensive data intelligence technologies, our company has obtained over 2,000 technical patent certifications, more than 400 software copyright registrations, has been featured in Gartner reports 10 times, and has participated in the formulation of multiple industry and national standards.

2. Where do you think AI-based services can have a positive impact for research? What features and benefits does AI bring, and what problems does it address?

MiningLamp Technology's AI-based services are making a positive impact on academic research, market research, and various data-intensive fields through data integration capabilities, AI Agent technology, and multimodal analytics. Our technology effectively addresses numerous pain points in traditional research.

- **Insights and Cross-Modal Analysis:** AdEff utilizes the HyperGraph multi-modal large language model (HMLLM) capable of processing text, images, videos, and other multimodal data. It can uncover deep-level correlations and even simulate human subjective cognition, pushing the boundaries of AI research methodologies.
- **Research Automation:** The DeepMiner agent achieves an "end-to-end intelligent closed loop," translating analytical conclusions into practical business operations, significantly improving the efficiency of research implementation.
- **Business and Decision Intelligence:** Research outcomes can be directly integrated with actual business systems and applied in scenarios such as consumer insight, content marketing evaluation, and cross-cultural research. This drives research from "explaining phenomena" to "driving decision-making."

MiningLamp AI effectively tackles issues in traditional research—such as data fragmentation, low efficiency, and superficial insights—through intelligent data integration, automated analysis, and multimodal cognitive capabilities. It has become a key enabler in accelerating scientific innovation and business transformation.

3. What practical problems and issues have you encountered in the use and deployment of AI? What has worked well and how, and what has worked less well and why?

The challenges faced by the MiningLamp Technology Group in the process of AI implementation are highly representative, including the "hallucination" of general large models in specialized fields, the difficulty in understanding and analyzing multimodal (video) data, and the challenge of predicting audience subjective responses (such as attention, emotion, and engagement) using AI models.

- **Challenge 1:** "Hallucination" of general large models in specialized fields.
  Solution: Construct a technical framework combining a "Domain Knowledge Graph and RAG (Retrieval-Augmented Generation)."
- **Challenge 2:** AI has difficulty in understanding and analysis of multimodal data (video).
  Solution: Convert multimodal data into holistic and second-by-second content descriptions, coupled with the analysis of temporal audio, to synchronously decode visuals, audio, and sound effects.
- **Challenge 3:** Predicting subjective responses (attention, emotion, engagement).
  Solution: The HyperGraph multimodal large language model successfully predicts subjective responses based on non-standard modal data. This achieves the goal of "teaching" machines human subjective cognition—not only enabling them to "understand the content" but also to "understand how users are influenced."

B. Is the AI capability/service explainable and fit for purpose?

4. Can you explain the role of AI in your service offer in simple, non-technical terms in a way that can be easily understood by researchers and stakeholders? What are the key functionalities?

AdEff, launched by MiningLamp Technology on June 19, 2025, is an AI-driven advertising testing and optimization platform. Its core capability lies in using artificial intelligence to quickly predict the potential performance of ad creatives before they are launched. Key features include:

- **Fast Creative Testing:** Predicts ad performance in as little as 15 minutes.
- **Subjective Response Prediction:** Leveraging the HyperGraph multimodal large language model and a proprietary neuromarketing database, it forecasts consumers' subjective reactions to advertisements, including attention curves, emotional fluctuations, and engagement with the creative content.
- **Optimization Recommendations:** Utilizing a Mixture of Experts (MOE) reasoning system, it outputs the strengths, weaknesses, and optimization suggestions for the content, with downloadable PPT reports.

5. What is the AI model used? Are your company's AI solutions primarily developed internally or do they integrate an existing AI system and/or involve a third party and if so, which?

AdEff is built around MiningLamp's internally developed HyperGraph Multimodal Large Language Model (HMLLM)-"Mingjing," which received a Best Paper Nomination at ACMMM 2024 (a CCF-A category conference). Specifically designed for advertising creative testing scenarios, the model is continuously trained, fine-tuned, and iterated by a dedicated professional team. Its capability to predict subjective responses positions AdEff as an industry leader in forecasting and evaluating the effectiveness of advertising creatives.

At the same time, we prudently evaluate and integrate advanced AI technologies and tools from both domestic and international sources. When necessary, we engage in complementary collaborations with third-party systems to enhance the comprehensiveness and performance of our solutions. This includes technologies such as DeepSeek, GPT, Claude, Gemini, and others.

6. How do the algorithms deployed deliver the desired results? Can you summarise the underlying data and the way in which it interacts with the model to train your AI service?

AdEff achieves its intended outcomes through a three-tier scientific architecture and systematically integrates foundational data with model training. The specific methodology is as follows:

- **100,000+ Neuroscientific Test Data Points as Training Set:** Model training is based on over 100,000 real human test data points accumulated over ten years. All samples were collected using NeuroBox EEG and eye-tracking devices, recording consumer reactions while viewing advertisements, forming the core dataset for model training.
- **HyperGraph Multimodal Large Language Model Predicts Subjective Responses to Creatives:** The HMLLM processes videos by segmenting them frame-by-frame, predicting audience subjective responses such as attention, emotion, and engagement levels per second, measured via EEG and eye-tracking metrics. Simultaneously, it decodes audio ASR data at a sub-second level to extract content insights. These predictions are further synthesized into evaluative metrics.
- **Mixture of Experts Provides Optimization Recommendations:** By integrating multidimensional expertise in advertising strategy, creative design, visual expression, and industry research, the MoE system semantically interprets predicted metrics and generates actionable recommendations. This ensures the output conclusions are both scientifically grounded and practically applicable.

- **One-Click PPT Report Generation:** The platform automatically generates detailed reports in PPT format, covering multiple core results such as effectiveness indices, response curves, metric analysis, golden 3 seconds, brand moments, message moments, interest moments, ending 3 seconds, and heatmaps.

C. Is the AI capability/service trustworthy, ethical and transparent?

7. What are the processes to verify and validate the output for accuracy, and are they documented? How do you measure and assess validity? Is there a process to identify and handle cases where the system yields unreliable, skewed or biased results? Do you use any specific techniques to fine-tune the output? How do you ensure that the results generated are 'fit for purpose'?

AdEff has established a process—though not fully public—whose effectiveness has been preliminarily validated. This process ensures the accuracy and reliability of its outputs, actively works to reduce biases, and ultimately guarantees that the results effectively serve practical advertising creative evaluation scenarios.

- **Human Result Validation:** The correlation between AI-predicted results and human data reaches 0.89 ($p < 0.001$). The validity of the outputs is assessed through statistical correlation metrics.
- **Expert Review Validation:** Expert panels are organized to validate and correct biases in case studies, achieving an expert consensus rate of 76%. The expert review process includes bias identification, which, once

detected, is corrected through an expert rectification mechanism and used for model optimization.

- **Cross-Cultural and Cross-Temporal Training Data Collection:** Before entering new countries or regions, expert validation is conducted, and their recommendations are incorporated. Where necessary, human sample collection is carried out in specific countries or regions to gather training data across cultures and timeframes.
- **Model Optimization and Fine-Tuning:** The model is continuously trained and calibrated with newly collected human data, and its outputs are fine-tuned accordingly.

8. What are the limitations of your AI models and how do you mitigate them?

AdEff, as an AI-based tool for predicting advertising creative effectiveness, similarly faces limitations common to AI products, such as dependency on training data, constraints in cross-cultural adaptability, and the probabilistic nature of AI predictions.

- **Dependency on Training Data:** The model heavily relies on the quality of its training data. If the data contains biases, is incomplete, or has significant noise, the output results may deviate or lose accuracy.
  Countermeasures: Conduct multi-dimensional data collection (e.g., gender, age, region) and regularly incorporate new real-user data for model iteration, continuously optimizing data coverage and timeliness.
- **Limitations in Cross-Cultural Adaptability:** When applied to new industries or cultural regions with limited training data coverage, the model's effectiveness may be constrained.
  Countermeasures: Advance multilingual and cross-cultural testing, beginning with expert validation and, if necessary, supplementing with sample data collection for calibration.

- **Probabilistic Nature of AI Predictions:** The predictions generated by AI models are inherently probabilistic. For edge cases, predictions may exhibit variability, introducing uncertainty into user decision-making. **Countermeasures:** Provide detailed visual reports (e.g., heatmaps, attention curves) to help users understand the basis of predictions and support informed decision-making.

9. What considerations, if any, have you taken into account, to design your service with a duty of care to humans in mind?

AdEff service design prioritizes "Responsibility to Humanity" as a core principle, addressing the following aspects to ensure its services develop responsibly and in a human-centric manner:

- **Positioning & Empowerment:** We clearly position Adeff as an assistant to humans, helping marketers (particularly those with less experience) enhance their creative judgment. It liberates humans from repetitive tasks, allowing them to focus on higher-value innovative work.
- **Transparency & Control:** The platform clearly explains how the AI operates and the basis for its decisions, providing interpretable analysis reports (e.g., heatmaps, attention curves). We transparently disclose data usage and AI reasoning mechanisms to users, who can explicitly restrict data usage scope through agreements.
- **Security & Trustworthiness:** At the technical level, user-uploaded data is isolated. Without user consent, data is never used for AI model training. Privacy protection and security barriers are firmly established.
- **Feedback & Optimization:** AdEff provides user feedback channels, promptly responds to user inquiries, and incorporates feedback into the model iteration and service optimization processes.

D. How do you provide Human Oversight of your AI system?

10. Transparency: How do you ensure that it is clear when AI technologies are being used in any part of the service?

AdEff is a purely AI-native service. Whenever users agree to utilize AdEff for advertising analysis, they are inherently engaging with its AI technology.

11. Do you have ethical principles explicitly defined for your AI-driven solution, and how in practice does that help to determine the AI's behaviour? How do you ensure that human-defined ethical principles are the governing force behind AI-driven solutions?

The ethical practices of AdEff are integrated into data selection, product positioning, and validation processes:

- **Data Selection:** Training AI models with real human feedback data to align them with ethical guidelines.
- **Expert Validation:** Inviting experts to conduct rigorous reviews of AdEff's outputs.
- **Bias Mitigation:** Utilizing diverse datasets and regularly testing for fairness.

12. Responsible Innovation: How does your AI solution integrate human oversight to ensure ethical compliance?

AdEff solution ensures its operations comply with ethical guidelines through the following measures:

- **Human Review Mechanism:** Users are responsible for conducting manual reviews of AdEff-generated content to prevent harmful, biased, or ethically non-compliant outputs.

- **Security and Controllability:** Users retain full autonomy in decision-making, with the right to choose whether to utilize AdEff services, ensuring humans remain in the dominant position.
- **Feedback Channels:** Accessible channels are provided for users to report potential ethical concerns (e.g., bias, discrimination), with a dedicated team promptly addressing and resolving such issues. Rely on public oversight to identify potential issues and drive continuous system improvement.

E. What are the Data Governance protocols?

13. Data quality: How do you assess if the training data used for AI models is accurate, complete, and relevant to the research objectives in the interests of reliable results and as required by some data privacy laws?

At AdEff, we place the highest priority on the quality of training data to ensure the credibility of research findings. We systematically evaluate the accuracy, completeness, and relevance of the data used for AI model training through the following processes:

- **Data Sources and Sample Design:** Training data is collected through strictly controlled offline recruitment via invitation, ensuring reliable sources and well-defined demographic structures.
- **Data Validation Mechanism:** Data quality is verified through a combination of statistical correlation analysis and expert review. AI prediction results must achieve a correlation above 0.89 ($p < 0.001$) with human test data and a 76% consistency rate with expert evaluations.
- **Continuous Optimization:** Regular additions of authentic sample data are used for model iteration, optimization, and calibration.

AdEff strictly adheres to the requirements of the Personal Information Protection Law and other relevant regulations. Before analyzing raw data and conducting model training, anonymization processing is applied to remove all identifiers that could identify specific individuals, thereby fully leveraging data while protecting user privacy.

14. Data lineage: Do you document the origin and processing of training or input data, and are these sources made available?

AdEff maintains detailed documentation regarding the sources and processing procedures of its training data. The methodology and effectiveness of its data handling have been partially disclosed through academic publications and test validations. However, the core raw training data is not publicly accessible due to commercial confidentiality and brand copyright considerations.

Partial Disclosure via Academic Channels: Technical details of AdEff's core technologies—such as the Video-SME and SPA-ADV datasets used by its foundational HMLLM—along with related research findings have been published and shared in the form of papers at top-tier academic conferences like ACMMM. These publications provide insight into its methodologies for data construction and processing.

Limited Accessibility of Raw Data: The neuroscience dataset (containing over 100,000 participant records) and the global creative materials repository constitute proprietary assets and commercial confidentiality of MiningLamp Technology. As these resources contain sensitive commercial information and user privacy data, they are unlikely to be made fully available to the public or general users.

15. Please provide the link to your privacy notice (sometimes referred to as a privacy policy). If your company uses different privacy notices for different products or services, please provide an example relevant to the products or services covered in your response to this question.

We fully recognize the importance of personal information and is committed to protecting and upholding your control over your personal data through strict compliance with relevant laws and regulations, as well as the implementation of industry-leading security measures. Privacy Statement for AdEff: https://adeff.com/doc/privacy_policy

16. What steps do you take to comply with data protection laws and implement measures to protect the privacy of research participants? Have you evaluated any risks to the individual as required by privacy legislation and ensured you have obtained consent for data processing where necessary or have another legal basis?

We have obtained certifications for the Information Security Management System (ISO/IEC 27001), the Quality Management System (ISO 9001), the IT Service Management System (ISO/IEC 20000), and the Privacy Information Management System (ISO/IEC 27701). Our core product, the Marketing Intelligence Platform, has passed the Classified Protection Level 3 certification.

Beyond management system certifications, MiningLamp Technology Implements technical measures (such as encryption, desensitization, federated learning, and differential privacy), builds organizational structures (such as a Data Security Committee), and implements privacy impact assessment processes to comply with data protection laws and safeguard user privacy. We also ensure a legal basis for data processing by obtaining authorizations and adhering to privacy regulations, while effectively managing data security risks.

17. What steps do you follow to ensure AI systems are resilient to adversarial attacks, noise and other potential disruptions? Which information security frameworks and standards do you use?

We adhere to the ISO 27001 standard to effectively defend against adversarial attacks and system disruptions. We implement advanced firewall protection, encryption technologies, and continuous monitoring mechanisms to ensure system resilience and data integrity.

AdEff identifies and eliminates potential vulnerabilities through routine security assessments. By proactively addressing security risks, we maintain constant readiness for disruption incidents, fully commit to protecting user data, and deliver a stable and reliable experience.

18. Data ownership: Do you clearly define and communicate the ownership of data, including intellectual property rights and usage permissions?

When registering to use the AdEff product, users are required to sign the User Agreement. The agreement explicitly stipulates data ownership, including intellectual property rights and data usage permissions.
User Agreement: https://adeff.com/doc/terms_of_service

19. Data sovereignty: Do you restrict what can be done with the data?

The advertising effectiveness predictions and optimization recommendations generated by AdEff are intended for internal business decision-making and advertising campaigns. The legal ownership of these outputs belongs to the user. However, prior to any public release or commercial use of the generated content, it is essential to conduct a manual review to ensure it does not infringe upon third-party rights and complies with AdEff's usage restrictions. If users intend to utilize these outputs in specific ways (such as incorporating them into

reports provided to their clients), it is advisable to contact AdEff to determine whether a supplementary agreement is required.

20. Ownership: Are you clear about who owns the output?

Users of AdEff hold the copyright to the output content and results generated based on the advertisements they upload.