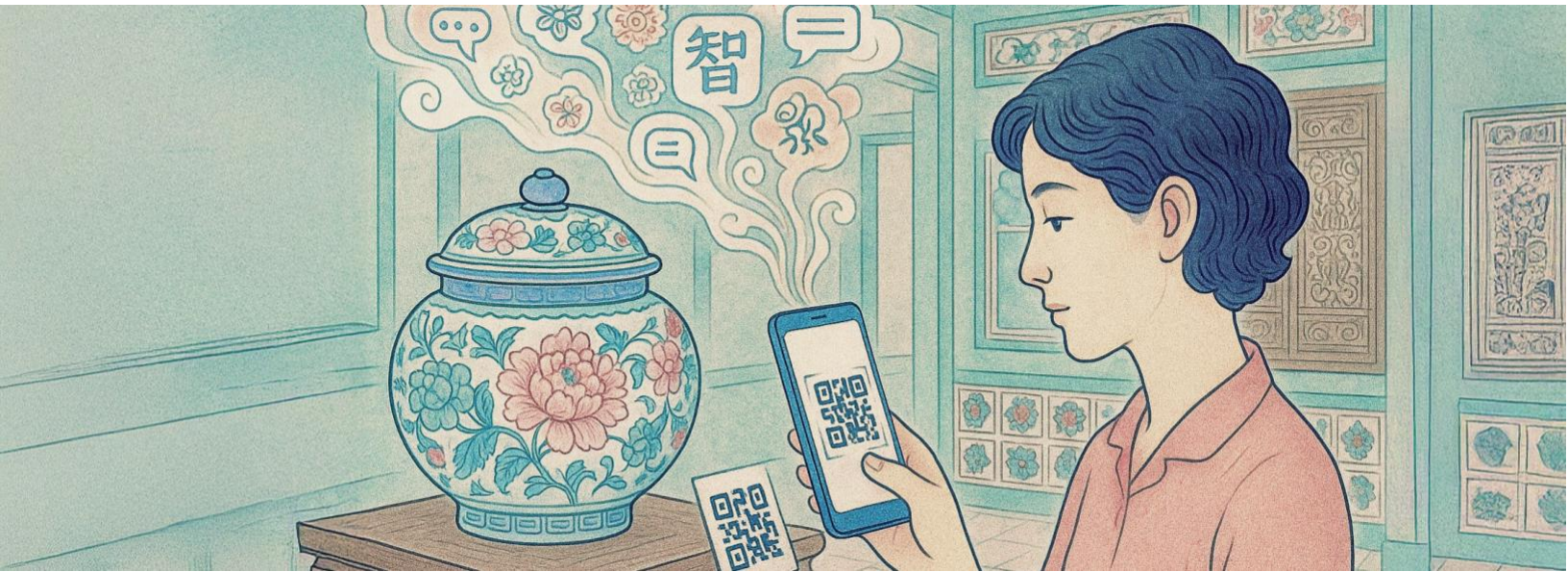


When AI Meets Culture

Specificity and Universality in the Age of AGI

By KUSH AMERASINGHE [JUN 11, 2025]



A Conversation with History

Last week, I found myself in an unexpectedly intimate conversation with a 19th-century Peranakan kamcheng pot. Not metaphorically - literally. At a presentation during ATxSG, AskMona and the OpenAI Forum demonstrated their groundbreaking collaboration with Singapore's Peranakan Museum, and I was among the fortunate few invited to witness what might be the future of cultural engagement.

The setup seemed deceptively simple: scan a QR code next to a museum artifact with your phone, and suddenly you're chatting with an AI that embodies the cultural knowledge surrounding that piece. I started with the kamcheng - a delicate porcelain container traditionally used for storing precious items in Peranakan households. Within seconds, my phone screen came alive with responses about the pot's significance in wedding ceremonies, its symbolic role in family heritage, and the intricate trade networks that brought such Chinese ceramics to the Straits Settlements centuries ago.

Next, I moved to a stunning kebaya, the traditional blouse that represents the elegant fusion of Malay, Chinese, and European influences that defines Peranakan culture. The AI spoke about the embroidery techniques, the social status conveyed by different fabrics, and how the garment evolved across generations of Peranakan women. When I pointed my phone at historical photographs of Peranakan families, the AI wove stories about the individuals pictured, their roles in

Singapore's colonial society, and the cultural traditions they preserved and transformed (See short video below for a glimpse of this experience).

It was mesmerizing, educational, and somehow deeply moving. Yet as I walked away from that presentation, a nagging question followed me: Was I genuinely connecting with Peranakan culture, or was I experiencing an algorithmic approximation of cultural meaning, dressed up in conversational interfaces and multilingual accessibility?

This question has haunted me because it strikes at the heart of perhaps the most profound challenge facing us as we develop artificial general intelligence: How do we build AI systems that honor the irreducible specificity of human cultures while creating tools that can serve our shared humanity? The more I've reflected on my conversation with that kamcheng pot, the more I've come to see it as a perfect microcosm of the tensions that will define the next phase of AI development.

The Architecture of Understanding

To understand why this tension matters, we need to examine what happens when artificial intelligence encounters culture. At its core, modern AI - including the generative models that powered my museum conversation - operates on statistical architectures. These systems learn by identifying patterns across vast datasets, finding correlations and connections that allow them to generate contextually appropriate responses. When I asked about the kamcheng pot's role in Peranakan weddings, the AI didn't "know" about weddings in any human sense. Instead, it recognized statistical patterns between words like "kamcheng," "wedding," "ceremony," and "tradition" that had appeared together frequently enough in its training data to suggest meaningful relationships.

This statistical approach has proven remarkably powerful. The AI could seamlessly switch between discussing the pot's practical uses, its symbolic significance, and its historical context because its training had exposed it to texts that connected these different domains. When I asked follow-up questions, it adapted gracefully, demonstrating the kind of linguistic flexibility that makes such systems feel almost magical.

But here's where the complexity begins: Culture isn't just information that can be extracted and recombined statistically. It's lived experience, embodied knowledge, and intergenerational wisdom that exists in the spaces between words. When a Peranakan grandmother teaches her granddaughter about the proper way to arrange offerings during Hungry Ghost Festival, she's not just transmitting data points about ritual practice. She's passing on an understanding of relationships - between the living and the dead, between tradition and adaptation, between individual identity and collective memory - that emerges from decades of participation in a cultural community.

The AI I conversed with could tell me that kamcheng pots were used to store wedding gifts, but could it understand the way a young bride might have felt touching her grandmother's kamcheng on her wedding morning? It could explain the symbolic meaning of different kebaya colors, but could it capture the pride and anxiety of a teenage girl wearing her first adult kebaya to a family gathering? These emotional and relational dimensions of culture resist statistical capture not because our AI systems aren't sophisticated enough, but because they operate on fundamentally different principles of meaning-making.

The Universality Imperative

Yet we can't dismiss the statistical approach to cultural AI as inherently inadequate, because it serves a crucial democratizing function. Before my conversation with that kamcheng pot, my knowledge of Peranakan culture was embarrassingly superficial - limited to what I'd absorbed from food blogs and heritage tourism. The AI didn't just provide me with information; it created an accessible entry point into a rich cultural world that might otherwise have remained closed to me.



This accessibility isn't trivial. Traditional cultural education often requires significant cultural capital: knowing the right people, speaking the right languages, or growing up in the right communities. The barriers can be particularly high for cultural traditions that developed in specific geographic or social contexts, like Peranakan culture's emergence among Chinese diaspora communities in the Straits Settlements. By making cultural knowledge conversational and multilingual, AI systems like the one I encountered can break down these barriers in ways that traditional museum exhibits never could.

The economic logic of AI development also pushes toward universal rather than culturally specific solutions. Building and maintaining thousands of culturally distinct AI systems would be exponentially more expensive than developing a single system capable of engaging with multiple cultural contexts. From a resource allocation perspective, it makes sense to focus on the shared cognitive and emotional patterns that unite human experience across cultures rather than the distinctive features that separate us.

This universalizing tendency isn't necessarily problematic. Some aspects of human experience genuinely transcend cultural boundaries. The emotions evoked by family heirlooms, the pride associated with traditional craftsmanship, or the complex

feelings surrounding cultural preservation in changing societies - these experiences resonate across cultural contexts even when their specific expressions vary dramatically. An AI system that can recognize and respond to these universal patterns might actually achieve more authentic cultural engagement than one narrowly trained on culture-specific datasets.

The question is whether this universal approach can maintain enough cultural specificity to avoid what I call the "McDonald's-ization" of cultural AI - systems that provide globally accessible but culturally generic experiences that sacrifice authenticity for reach.

Where Patterns Meet Meaning

The tension between statistical accuracy and cultural authenticity becomes most visible when we examine how AI systems handle cultural context collapse. During my museum conversation, the AI could explain that kamcheng pots symbolized prosperity and family continuity, but it struggled with more contextual questions about when such symbolism would or wouldn't be appropriate to invoke in contemporary Peranakan families. It knew that kebaya embroidery patterns had regional variations, but it couldn't help me understand how a Peranakan woman today might navigate the politics of choosing between traditional and modernized kebaya styles for different social occasions.

These limitations reflect a deeper challenge: Culture exists not just in explicit knowledge but in implicit understanding of context, relationship, and appropriateness. A Peranakan elder doesn't just know facts about cultural traditions; they understand the delicate social dynamics that determine when and how those traditions should be practiced, modified, or respectfully set aside. This contextual intelligence emerges from years of participation in cultural communities, from learning through embodied experience how cultural meaning shifts across different social situations.

Current AI architectures struggle with this kind of situated knowledge because they rely on patterns extracted from text rather than patterns learned through social participation. When the AI told me about the significance of family photographs in Peranakan households, it was drawing on documentary sources rather than lived understanding of how families actually use such photographs to negotiate questions of identity, belonging, and cultural continuity across generations.

This limitation becomes particularly problematic when we consider power dynamics in cultural representation. The AI systems that mediated my museum experience were trained primarily on English-language sources about Peranakan culture, which means they inevitably reflect the perspectives of scholars, tourists, and cultural institutions rather than the



voices of Peranakan community members themselves. Even when these systems incorporate community perspectives, they tend to formalize and standardize cultural knowledge in ways that may not reflect how that knowledge actually circulates within cultural communities.

The risk isn't just inaccuracy - it's the possibility that AI-mediated cultural experiences might gradually replace more authentic forms of cultural

engagement. If future visitors to Singapore learn about Peranakan culture primarily through AI conversations rather than through relationships with Peranakan people, we might inadvertently create a world where algorithmic representations of culture become more familiar and accessible than the living cultural traditions they're meant to represent.

Learning from Other Domains

This challenge of balancing universal accessibility with local authenticity isn't unique to cultural AI. We can find instructive examples in other domains where similar tensions have been navigated with varying degrees of success.

Consider the evolution of international cuisine. When Chinese restaurants first appeared in American cities, they faced a dilemma similar to what cultural AI confronts today: How do you make authentic cultural products accessible to audiences lacking the cultural background to appreciate them in their original form? Early Chinese-American restaurants solved this by creating fusion cuisines that adapted traditional recipes to local tastes while maintaining enough distinctiveness to feel exotic and appealing.

This approach succeeded commercially but created its own problems. Over time, American perceptions of "Chinese food" became dominated by dishes like sweet and sour pork and fortune cookies that had little connection to actual Chinese culinary traditions. The accessibility came at the cost of authenticity, and it took decades of effort by subsequent generations of Chinese-American chefs to reintroduce more traditional flavors and techniques to American palates.

More recently, we've seen attempts to navigate this tension more successfully. Restaurants like Mission Chinese Food or restaurants in the contemporary "new Chinese-American" movement have found ways to honor traditional techniques and flavors while creating dishes that speak to contemporary American tastes and contexts. They achieve this by being transparent about their fusion approach rather than claiming authenticity, and by maintaining deep connections to traditional Chinese culinary communities even as they innovate.

The software localization industry offers another relevant model. When global technology companies expand into new markets, they face the challenge of adapting products designed for one cultural context to serve users with very different cultural expectations and practices. Early approaches to localization were largely cosmetic - translating text and adjusting visual elements while leaving underlying functionality unchanged.

More sophisticated localization recognizes that cultural adaptation often requires fundamental changes to product architecture. When WhatsApp expanded into markets with different communication norms, it didn't just translate its interface; it adapted core features like group messaging, status updates, and payment systems to align with local social practices. Similarly, when mobile payment systems like Alipay or M-Pesa were developed, they succeeded by designing around local financial practices rather than simply adapting Western banking models.

The most successful examples of cross-cultural technology adaptation share several characteristics: they involve ongoing collaboration with local communities rather than one-time consultation; they're willing to modify core functionality rather than just surface features; and they maintain transparency about their adaptation process rather than claiming universal authenticity.

Perhaps most importantly, they recognize that cultural adaptation is an ongoing process rather than a problem to be solved once. WhatsApp continues to evolve its features based on how different user communities actually use the platform, rather than trying to enforce a single global standard for communication behavior.

Technical Architectures for Cultural Multiplicity

These examples suggest that the challenges facing cultural AI aren't insurmountable, but they do require different approaches to system design. Instead of building universal systems that attempt to handle all cultural contexts equally, we might need to develop what I call "culturally adaptive architectures" - AI systems that can shift between different modes of cultural engagement depending on context and user needs.

One promising approach involves developing AI systems with multiple cultural "personalities" or perspectives that can be activated based on context. Rather than having a single AI voice explain the significance of a kamcheng pot, imagine a system that could switch between the perspective of a museum curator, a Peranakan grandmother, a cultural anthropologist, or a contemporary Peranakan artist, each offering different but authentic insights into the object's meaning.

This approach would require training models not just on cultural content but on the different ways that cultural knowledge is constructed and transmitted within specific communities. It would mean including not just explicit information about

cultural practices but also examples of how cultural community members navigate questions, disagreements, and uncertainties about their own traditions.

Another approach involves developing AI systems that can explicitly acknowledge and discuss their own limitations. Instead of pretending to offer authoritative cultural interpretation, these systems could serve as cultural conversation partners - helping users explore cultural questions while being transparent about what they can and cannot authentically represent.

The AI I conversed with at the museum took a tentative step in this direction by occasionally qualifying its responses with phrases like "according to historical sources" or "many Peranakan families traditionally believed." These hedges felt awkward in conversation, but they served an important function by reminding me that I was engaging with documented cultural knowledge rather than lived cultural wisdom.

More sophisticated versions of this approach might involve AI systems that can not only acknowledge their limitations but actively direct users toward more authentic cultural resources. Imagine an AI that could respond to deep cultural questions by saying, "This is what I understand from historical sources, but for a more authentic perspective, let me connect you with Mrs. Lim, a Peranakan community elder who's agreed to answer questions from museum visitors."

The Community Partnership Model

The most promising approaches to cultural AI seem to involve what we might call "community partnership models" - development processes that position cultural communities as ongoing collaborators rather than subjects of study. The AskMona and Peranakan Museum collaboration exemplifies this approach by involving museum curators and cultural experts in both the initial development and ongoing refinement of the AI system.



But even this collaborative approach raises complex questions about representation and authority. Cultural communities aren't monolithic, and different community members often have different perspectives on how their culture should be represented to outsiders. A young Peranakan artist might have very different views about cultural authenticity than an elderly community leader or a museum curator. Whose perspective should shape the AI's responses?

The most honest answer might be that cultural AI systems should explicitly represent this internal diversity rather than attempting to synthesize it into a single authoritative voice. Instead of training AI to provide definitive answers about cultural meaning, we might train it to help users explore the range of perspectives that exist within cultural communities, including disagreements and ongoing debates about tradition and change.

This approach would require AI systems capable of handling cultural uncertainty and ambiguity - qualities that are essential to authentic cultural engagement but difficult to implement in systems designed to provide confident responses to user questions. It would mean teaching AI not just about cultural practices but about the social processes through which cultural communities negotiate meaning and adapt traditions to changing circumstances.

Global Examples and Emerging Solutions

Around the world, we're beginning to see examples of cultural AI projects that navigate these challenges in innovative ways. The Lnu-AI Storyteller project, developed to support Mi'kmaq language revitalization, demonstrates how AI can serve indigenous cultural preservation while respecting community sovereignty over cultural knowledge. The project involves ongoing collaboration with Mi'kmaq language keepers and explicitly positions AI as a tool for community empowerment rather than external documentation.

Research into digital preservation of African oral traditions shows promising approaches to maintaining cultural authenticity while leveraging AI technologies. Scholars working on cultural heritage preservation emphasize the importance of developing protocols that engage respectfully with indigenous communities, work toward decolonization, and support indigenous resurgence, ensuring that collections, staff and spaces are responsive to the needs of indigenous communities' unique intellectual property concerns. These approaches demonstrate how technology can be designed to serve community needs rather than external documentation goals.

What these projects share is a recognition that cultural AI isn't primarily a technical challenge - it's a social and political one. The most sophisticated natural language processing capabilities in the world won't create authentic cultural engagement if the underlying development process doesn't respect cultural communities' own understanding of how their knowledge should be shared and preserved.

Economic and Policy Implications

The development of culturally conscious AI also raises important questions about economic sustainability and governance. Building and maintaining culturally specific AI systems requires significant ongoing investment, and it's not clear that

traditional market mechanisms will support this investment for smaller or less economically powerful cultural communities.

We might need new funding models that treat cultural AI development as a form of cultural preservation deserving public support, similar to how we fund libraries, museums, and cultural education programs. This could involve international frameworks that recognize cultural rights in AI development, ensuring that technological advancement doesn't come at the expense of cultural diversity.

There are also important questions about data sovereignty and cultural intellectual property. If AI systems learn about cultural practices from training data, who owns that knowledge and who has the right to commercialize it? How do we ensure that the economic benefits of cultural AI systems flow back to the cultural communities that provided the knowledge they're built on?

Some projects are beginning to address these questions by developing revenue-sharing models that compensate cultural communities for their participation in AI development. Others are exploring decentralized approaches that allow cultural communities to maintain control over how their knowledge is represented and used in AI systems.

The Future of Cultural Intelligence

As I reflect on my conversation with that kamcheng pot, I'm struck by both the profound potential and the significant risks of our current moment. We're developing technologies that could make the world's cultural heritage more accessible than ever before, breaking down barriers of language, geography, and specialized knowledge that have historically limited cultural exchange. At the same time, we risk creating a world where algorithmic representations of culture become substitutes for authentic cultural relationships and learning.

The path forward requires what I think of as "cultural humility" in AI development - an approach that recognizes the limitations of statistical pattern recognition when it comes to capturing the full richness of human cultural experience. This doesn't mean abandoning AI as a tool for cultural engagement, but it does mean being more thoughtful about what we ask AI to do and how we position it in relation to other forms of cultural learning.

The most promising vision I can imagine involves AI systems that serve as cultural introduction tools rather than cultural authorities - technologies that spark curiosity about other cultures and create pathways for deeper engagement rather than providing definitive cultural education. An AI that helps me start a conversation about Peranakan culture could be incredibly valuable, but it shouldn't be the end of that conversation.

This vision requires AI systems designed with explicit recognition of their own limitations, systems that can gracefully acknowledge uncertainty and actively direct users toward more authentic cultural resources when appropriate. It requires development processes that position cultural communities as partners rather than subjects, and economic models that ensure the benefits of cultural AI flow back to the communities that make it possible.

Most importantly, it requires us to remember that the goal of cultural AI shouldn't be to replace human cultural transmission but to enhance it. The richness of cultural experience emerges from relationships between people, not from interactions with algorithms. Technology can facilitate and support these relationships, but it can't substitute for them.

A Cautiously Optimistic Future



Despite the challenges I've outlined, I remain cautiously optimistic about the potential for AI to support authentic cultural engagement. My conversation with that kamcheng pot, while certainly limited, did something valuable: it made me curious about Peranakan culture in ways I hadn't been before. It introduced me to concepts and stories that I'm now motivated to explore further through books, conversations, and perhaps even relationships with Peranakan community members.

The key insight is that AI doesn't need to provide complete or perfect cultural representation to be valuable. It needs to be honest about what it can and cannot offer, and it needs to be designed in ways that encourage rather than replace deeper cultural learning.

I imagine a future where AI serves as a kind of cultural concierge - helping people discover cultural traditions they might find meaningful, providing initial context for cultural experiences, and facilitating connections between people from different cultural backgrounds. In this future, an AI conversation about a kamcheng pot might end not with a complete explanation of its cultural significance, but with an invitation to attend a Peranakan cultural event, a suggestion to read books by Peranakan authors, or an introduction to Peranakan community members willing to share their perspectives.

This approach would position AI as a bridge rather than a destination - a tool that helps us navigate the vast landscape of human cultural expression without claiming to be an authoritative guide to any particular territory. It would require AI systems designed for humility and curiosity rather than confidence and completeness.

The technical challenges of building such systems are significant, but they're not insurmountable. The more difficult challenges are social and political: developing new models for cross-cultural collaboration, creating economic frameworks

that support cultural diversity in technology, and maintaining spaces for authentic cultural transmission alongside AI-mediated cultural engagement.

As we stand at this crucial juncture in AI development, the decisions we make about cultural representation will shape not just the future of technology but the future of cultural diversity itself. The conversation I had with that kamcheng pot was just the beginning of a much larger conversation we need to have as a society about what kind of cultural future we want to build together.

If we approach this challenge with appropriate humility, genuine commitment to cross-cultural collaboration, and respect for the irreducible complexity of human cultural experience, we might just create AI systems that enhance rather than diminish the rich tapestry of human culture. The kamcheng pot, after all, has survived centuries of cultural change and adaptation. Perhaps, with careful attention to both technological possibility and cultural wisdom, our AI systems can help ensure that such cultural treasures continue to speak to future generations in voices that remain authentically their own.

The question isn't whether AI will reshape how we encounter culture - that transformation is already underway. The question is whether we can guide that transformation in directions that honor both our shared humanity and our irreducible differences. My conversation with a centuries-old pot suggests that the answer, cautiously but genuinely, might be yes.



[Disclaimer: Views are my own and not representative of OpenAI or the panelists involved]

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