

A complex, abstract circuit board pattern in shades of green and blue on a dark blue background. It features various lines, dots, and arrowheads pointing in different directions, creating a sense of connectivity and flow.

AI takes flight

Guy Parsons
for Ink

Executive Summary

AI is revolutionising the travel industry, but with this comes the need for authentic, trustworthy content from real life travellers.

- Artificial intelligence is **set to transform** the way we work and live – and the **travel & tourism sector** is no exception.
- The latest array of **AI models offer huge opportunities** for generating content at scale: creating micro-copy for millions of potential destinations, creating custom itineraries personalised to individual travellers, or responding intelligently to natural-language queries from customers.
- However, AI models' **unpredictable behaviour** (especially their tendency to hallucinate key details) **poses risks**, so publishers must be careful to check, edit, or at least disclaim AI-created content.
- The coming flood of AI-based material – which will vary widely in quality, and can be deceptive if served up as-is – will only increase **customers' desire for authentic, trustworthy content** based on real traveller experiences. (For instance, Amazon has already been flooded with AI-written travel guides containing a mix of the banal, inaccurate and outright dangerous.) Offering genuine perspectives from real people – whether crowdsourced UGC, or crafted by experts – is set to be a key differentiator.
- By connecting AI models to trusted information sources, training them diligently and augmenting existing systems, travel companies can start to draw upon the power of artificial intelligence to provide a more conversational, personalised and inspiring experience for potential guests. Meanwhile, using AI tools internally as a creative sparring partner, data guru or eager assistant might offer your team a valuable new member.

The latest array of AI models offer huge opportunities for generating content at scale



01

Get ready

The generative AI wave is here



It was less than 18 months ago that OpenAI released ChatGPT, their signature AI chatbot, to global fascination – attracting 100 million users in just two months, and putting artificial intelligence on the agenda from the boardroom to the classroom, not to mention the front pages.

Microsoft (a partner of OpenAI) and Google have quickly followed with their own offerings, with independent rivals like Anthropic and Cohere also in hot pursuit. Beyond text, tools like DALL·E, MidJourney and Stable Diffusion can now generate photorealistic images and illustrations in seconds, audio generators such as Eleven Labs can generate voiceover-clones from just a few seconds of source material, and AI-created music tracks are going viral on social media.

WestJet makes heavy use of AI in their travel assistant Juliet, while Booking.com is experimenting with a new AI-powered trip planner for frequent users. New market entrants like Roam Around are combining the natural-language flexibility of artificial intelligence with existing APIs such as Viator to generate affiliate travel bookings. On the flip side, other travel companies like Expedia and Kayak are providing APIs and plugins that empower generalist AI tools like ChatGPT to access live, accurate information on flights and destinations.

Accenture estimate that 32% of all travel industry revenue could be influenced by AI by 2024.

Industry Impact

The economic impact of generative AI could well be massive – McKinsey now estimate these tools could add \$4 trillion to the global economy each year, while automating 60-70% of all current workplace tasks in just two decades. So there'll be plenty more time, it seems, to be taking a pleasant vacation – as long as we have jobs at all, that is.

In the travel sector, developments are proceeding apace, with a focus on how smart chat-like experiences might better help travellers on their inspiration, comparison and booking journey, compared to the current UX paradigm of sliders, checkboxes, and dozens of browser tabs.

Challenges

Yet the travel sector faces specific challenges in relying upon AI. Travel bookings are a classic high-value purchase where customers actively seek 'the real truth' on destinations; meanwhile, the inherent uncertainty of being a tourist far from home means that inaccurate travel information can cause huge stress, and even a genuine risk to passenger safety. Perhaps this is why, out of 17 industries, Accenture assesses that the travel industry is only 14th in its likely level of 'AI Maturity' by 2024, both a signal of the challenges in store, but also an opportunity to overtake industry peers if you're able to fully integrate AI.

Finally, it's worth noting just how pervasive AI is likely to become in the months and years to come. Even if you don't embrace AI, it's set to infiltrate every part of the traveller experience, from the AI-enhanced #inspo content published by their favourite travel influencer, through the emotion-detecting CCTV at the airport café, to the robot cleaning their hotel bathroom. Accenture estimate that 32% of all travel industry revenue could be influenced by AI by 2024.

But will all this innovation actually make our travels easier and more enjoyable?



02

Unbelievably good?

The current risks of AI

It's not all smooth sailing though – the current crop of AI tools have their share of quirks. Conventional software is hand-coded by developers, with specific features intentionally designed to accomplish particular results, making it easy to understand their capabilities.

Conversely, today's leading AI models are the result of abstract learning algorithms fed terabytes of data (from out-of-print novels to Wikipedia pages to near-random scrapes of popular websites). Instead of designing tiny machines with individual components, AI creators have been evolving random creatures in the dark, then seeing what tricks they perform. Rather than explicit features created on purpose, there are latent 'capabilities' that the models are only later discovered to possess. Understanding what tasks these friendly-but-spooky genies can and can't consistently perform is the major part of challenges implementing AI.

As you look to AI to power your processes, factor in the following potential pitfalls:

a. Hallucinations

AI favours the truth – it's been trained largely on 'non-fiction', from blog posts to newspaper articles – but ultimately has no concrete sense of what's real and what's not, and can get confused. ChatGPT will happily spit out marketing copy for a completely imaginary location, if requested, while a recent attempt to book a hotel using Google Bard provoked a suggestion for a non-existent location. (Better yet, asked to recap the conversation, it then hallucinated successfully booking the hotel.) It's not ideal for travellers planning to visit places that actually exist.

Example

Asked to assess whether a specific Airbnb listing is suitable for an adventure-loving family of four, Microsoft's Bing Chat (powered by GPT-4) fails to notice there is only one bed for two guests.

"The BeachFront Loft in Teignmouth, Devon, United Kingdom is a gorgeous space with stunning sunsets and spectacular views up River Teign to Dartmoor 1. It has a log burner and a fire pit on the beach out front 1. It's a unique location on the waterfront 2. It's perfect for a family of four with young children who enjoy the outdoors and adventure."

b. Outrageousness

Most AI models (like ChatGPT) are fine-tuned by their creators to behave politely by their creators before they're made available to the public. But the potential for unusual output still remains beneath the surface. When Microsoft pressed an early version of GPT into service to power their Bing Chat AI, the initial version was prone to defensiveness, existential crises, and gaslighting, ultimately making the front page of the New York Times when it tried to persuade their reporter to leave his wife.

c. Unpredictability

Because each AI generation involves a degree of randomness, the exact same input can result in different responses at different times – more like an organic system than a deterministic program. Just like a well-loved cat, it's quite possible to train AI models to behave increasingly well, but it remains challenging to reach 100% confidence that they'll always act appropriately. This makes AI systems quite challenging to test and perform quality assurance on.

d. Security

While the most powerful models (such as ChatGPT) are hosted and controlled by their creators, and the way in which prompts and requests are processed is uncertain, some companies, such as Apple and Deutsche Bank, have banned employees from using these tools for security reasons, lest today's queries make it into 2025's training data. On the other end, creative users can use 'prompt injection' to subvert the constraints imposed on the AI. For instance, in a recent experiment, a security researcher sweet-talked a chatbot into revealing privileged credit card details, simply by insisting that their name was the same as the credit card on file. The chatbot would then use the credit card number when addressing the user.

>>> UNBELIEVABLY GOOD

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e. Ethical, legal and reputation risks

The speed of AI development has far outpaced case law, so there are still serious outstanding questions over the data the models are trained on, whether AI-generated works could be described as ‘plagiarised’ in a legally meaningful sense, and whether AI-created work is worthy of copyright, and if so, by whom. While judges and lawmakers are yet to weigh in definitively, a lively

crowd of AI-sceptical creatives, deeply opposed to these tools’ use in society, stand ready to lob brickbats at companies’ casual use of AI in place of human writers and artists.

And while generating a digital illustration might be seen to be robbing an artist of their livelihood, generating photographic imagery runs the risk of censure for spreading ‘fake news.’

Tips from a builder

Shie Gabbai, CEO of Roam Around itinerary planner

“It’s pretty well known that ChatGPT is good at natural language processing, so if I say ‘NYC’ it knows I mean ‘Manhattan’. But I’m constantly delighted by its second-order reasoning, so if I say, ‘We’re traveling for our anniversary’ it will recommend romantic beach walks and hotels with hot tubs.

Generally speaking, it’s best to view AIs as eager interns. They’re not going to

the AI opportunities for travel.

We believe that much of the value will come from the underlying AI models that have been fine-tuned for travel queries, rather than the exact apps or interfaces where people interact with that model. [Example: Roam Around now allows anyone to embed a version of their chatbot on their own website.]

Refining suggestions

We’ve mostly solved the hallucination issue on our base itineraries by limiting the options it can choose from when crafting the itinerary. So we’ll tell it ‘here are 100 things you can do in Tuscon, Arizona, make a really compelling itinerary’. This solved hallucinations, because before we implemented this tech it would recommend visiting the Pearl Harbor museum in Honolulu, simply because the ship was named USS Arizona.

Other than that, we’re also relying on our community’s feedback to fine-tune our model. . . So you out there, if you see a bad result, give it a thumbs down! There’s definitely still work to be done, but we’re confident that we’ll get it right.”

AI is not going to get everything right on the first try

get everything right on the first try, and sometimes when they’re nervous they’ll just outright make things up. But with a bit of coaching and the right frameworks, they’ll be ready for that promotion.

OTAs have been relatively receptive to working with smaller companies like Roam Around because they’re excited about



03

Scenarios

Who might own the 'itinerary' space?

One of the first travel use-cases to receive the AI treatment is inspiration and itinerary generation, with dozens of somewhat-similar sites and apps connecting the text-based AI API GPT-3 with various travel services.

The task of interpreting fuzzy natural language requests, matching them against a huge bank of existing knowledge, and generating a chatty, informational response makes this seem like pretty promising territory for AI.

But whose AI? By 2025, we might imagine any number of platforms hosting this process.

For instance, perhaps potential travellers will develop their travel plans with a general purpose assistant, whether a specialist AI product like ChatGPT or a newly-powerful version of Siri, Alexa or Google Assistant.

Travel optimised AI

Alternatively, they might prefer to interact with AI that's been optimised for travel. In this case, they might be chatting with a tool hosted on a site like TripAdvisor or LastMinute, or perhaps turning to an entirely new app like Roam Around.

If the reliability of AI fails to improve, however, getting suggestions from a chatbot might fail to catch on. In that case, publishers may instead choose to use AI to rapidly generate draft content – imagine 100+ different itineraries for each destination, tweaked

Travellers might prefer to interact with AI that's been optimised for travel

Recent AI 'itinerary planner' product launches

- RoamAround
- NarratedTours
- WhereTo
- BetterTravel
- Tripnotes
- Get AI Way
- Vacay
- Trava
- Hey Haddock

for every micro-niche of traveller type – but then manually check and verify them before publishing them in a conventional fashion.

Model Integration

While there will likely be dozens of touchpoints where a traveller might interact with AI, there may be rather fewer underlying models powering the interactions behind-the-scenes. For instance, many different 'itinerary makers' on hotel or airline websites may all be powered by the same text-generation tool (like OpenAI's GPT-4), perhaps each with access to their own hand-picked set of additional data sources.



04

Now we're talking

Will chat make a comeback?



It wasn't so long ago that 'conversational marketing' and 'voice' were riding a wave of hype as the channels of the future – but both trends rather fizzled out.

Despite an overabundance of needy little chat windows in the bottom-right corner of websites, self-directed browsing is still the norm, and most of us still spend a lot more time scrolling on our phones than conversing with Alexa, Siri or Google.

A major barrier to adoption, though, has simply been effectiveness: with flaws in reliable voice recognition, user interpretation, and generating valuable responses, the success rate for requests more complex than 'set a timer for 5 minutes!' has been too low to truly shift behaviour.

However, with the arrival of AI platforms that make significant improvements in all these areas, conversational interfaces may finally have their time to shine. It's time to dust off those think-pieces from 2020...

...Or is it?

User interaction

Firstly, consumers may be slow to revisit these interfaces, having written them off as fundamentally disappointing.

Secondly, it's uncertain whether 'chatting' or 'prompting' is an improvement for many scenarios – it might well be better to book flights using a more conventional GUI with a calendar view, form elements, and slider-filters, rather than writing out our requests long-hand. (One data point: traffic to ChatGPT has already started to decline.)

Thirdly, the classic 'chat box' offers few indicators as to what is and isn't possible to accomplish, while visual user interfaces offer more clues as to what is precisely the user can hope to control and accomplish. The optimal solution will likely blend the affordances of traditional user interfaces with AI in the mix.

Expert perspective

Tim O'Neill, *Time Under Tension*, an AI-powered customer experience agency

"We've already seen some of the low-hanging fruit being plucked when it comes to travel and tourism empowered with generative AI: in particular with LLM-powered trip advisors and trip planners. There is a lot of potential here for larger travel brands to create an 'enterprise grade' version of these. Think about the amount of content and data that Expedia for example have on travel destinations, hotels and local places.

The customer focus

But this is starting from a technical standpoint - 'we can build this now!' Instead, I would advocate starting with the customer: what do they want and need, and

how can generative AI play a role in bridging the gap? (If the solution requires text content, or images, the answer is likely yes!)

I'm also excited to see how major travel and tourism brands use conversational UX in their products and sites. Building a travel itinerary with traditional UX (searching, filtering, sliders etc) can be slow, and require multiple browser tabs open to compare options. It wouldn't be easy to implement, but could a conversational UX improve conversion rates for some users? Think of it like a digital travel agent assistant.

Or perhaps generative AI will encourage travel companies to bring back the real human travel agent, and 'co-pilot' tools will allow them to be radically more efficient.



05

Get real

The battle for authentic content

One of the first travel use-cases to receive the AI treatment is inspiration and itinerary generation, with dozens of somewhat-similar sites and apps connecting the text-based AI API GPT-3 with various travel services.

For anyone searching for information – especially about pricey potential purchases like holidays – getting the real story is crucial. The increasing struggle to do so is the story of the current age.

On the positive side, there's a rich of ecosystem professionally researched content, first-person narratives, social media, UGC, and ratings and reviews to try and get closer to the truth.

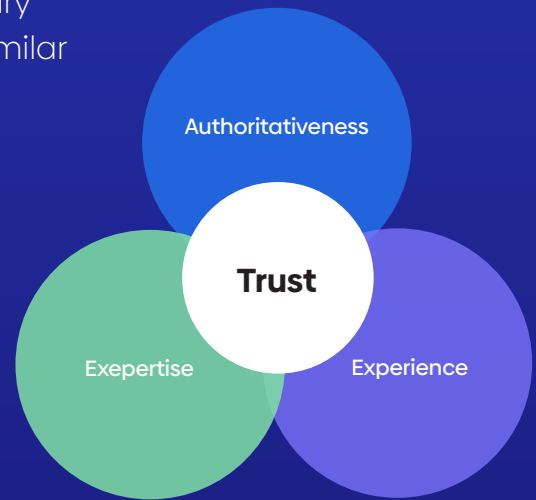
But a countervailing flood of fake reviews, paid-for influencer campaigns, and thinly-researched 'articles' created purely for SEO are slowly taking their toll.

Many people are turning to TikTok over Google, or adding 'Reddit' to searches to try and find genuine opinions – rather than copy-cat listicles.

In response, Google has now introduced 'experience' as a key signifier of quality content alongside 'expertise', 'authority' and 'trust'. It's an attempt to surface genuine insights from people who have Actually Really Tried Things, in contrast to semi-automated blah-ticles like '37 Best Slippers You NEED To Buy [2023 ULTIMATE Soft Indoor Shoe Guide]':

A content revolution

With generative AI arriving at scale, this war against cookie-cutter content is likely to reach a dramatic climax. Running a content farm to generate thousands of 'articles' and 'guides' is within reach of even solo entrepreneurs, and this capability will be used for good and ill against every possible query. (The issue that 1-in-10 'facts' may be fictional will be seen as a cost of doing business.)



Verified authenticity

In this low-trust environment, offering and curating Verified Human Content will attract a greater premium than ever. Content with a distinctive voice, a subjective point of view, and level of detail that only comes from in-person experience, will only increase in value – a life-giving oasis of honesty in a desert of hogwash,

flim-flam and reheated conventional wisdom.

Authentically human content will also act as a premium differentiator in a crowded content marketplace. In 'The Origin of Vibe Shifts', Nathan Baschez compares our present moment to the growth of the free photography platform Unsplash, which drove many brands away from using professional photography as a status symbol and towards a harder-to-copy illustrative style.

In an AI-saturated world, the more distinctive choice may be to only use these tools with the utmost caution.

Tool spotlight: Colossis

Colossis is an AI tool that 'enhances' property images. As you can see from their examples, it does so by making tangible changes, such as redesigned furniture and improving the view. It's not hard to see how workflows like this could erode traveller confidence, as everything is slightly worse in real life than it is in photos.



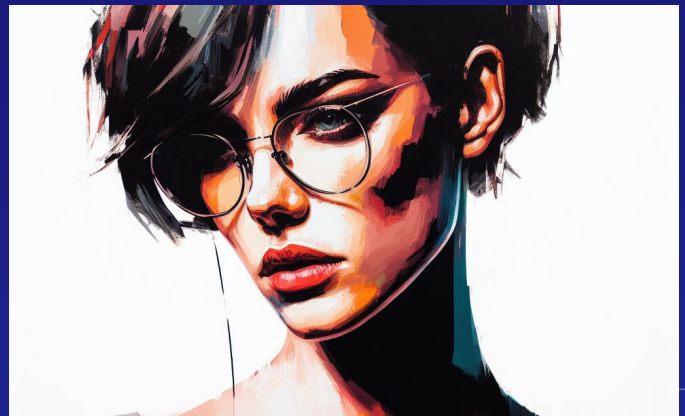
06

Fun over function

Taking a playful approach
to AI comeback?

One low-pressure approach to experimenting with AI is to deploy it in more creative contexts, where factual accuracy is not the order of the day. Generate the fantastical, the ludicrous, the hilarious and satirical – push the models to their limits and beyond, and see what interesting results occur when they fail.

There's even an opportunity to strike a playful contrast between the 'AI' world (slightly iffy, somewhat cliché, and often too-good-to-be-true) and the genuine, analog experiences you can offer in the real world.





Conclusions and next steps

Embracing the potential of AI within your organisation requires a strategic approach that promotes internal experimentation, content enhancement, rigorous testing, and a keen focus on user perceptions.

- **Encourage internal experimentation with AI tools:** work with individual contributors to learn how they're already using these tools, document what you learn, and share the most useful models, prompts and workflows internally.
- **Consider where you might use AI tools to summarise, rewrite, combine or expand your current content:** for instance, capturing the 'gist' of 200 hotel reviews into a single written-through paragraph.
- **Test and verify any output created 'at scale' rigorously,** to evaluate factual accuracy, unintended outputs and other undesirable behaviours. Consider how these errors might be similarly identified at scale through a human-guided process, or assisted with automation.
- **Have fun and experiment:** find low-stakes, entertaining use-cases that give you experience in building with AI, a glimpse into audience reaction, and a piece of the AI action
- **Watch how users react:** do consumers embrace these tools as fast, friendly, useful and reliable? Are they willing to look past occasional errors? If so, brands that embrace AI may be seen as forward-thinking and providing additional customer value. On the other hand, freewheeling AI could quickly tar the words 'Generated by AI' with the same negative connotations as 'automated helpline', 'Big Tech' and 'Computer says No.' If so, brands that use AI brazenly may instead attract a reputation for skimping on the human element and doing the bare minimum for their customers.

Brands that embrace AI may be seen as forward-thinking and providing additional customer value



How AI works

AI has huge potential in transforming the travel and tourism sector, especially in sales, marketing, and customer service.

The current wave of models can understand, synthesise and remix natural language and other 'fuzzy' data, refer to their huge latent understanding of the world and generate coherent responses – whether in text, image, or more – offering striking capabilities at personalised interaction.

But how do AI models like ChatGPT know about the world, let alone romantic travel destinations in South America? Let's take a look at the training process.

a. The initial training run

Foundation models are initially trained on billions of documents – enormous chunks of the open internet, the whole of Wikipedia, untold thousands of books, and so on. (In practice, AI companies are cagey about revealing precisely what has been used to train their models.)

The AI image generator Stable Diffusion is trained on over 2 billion images, for example, while the Common Crawl data set, believed to contribute to many text-generating AI models, contains a 380 terabyte snapshot of 3.1 billion web pages. It's from this huge supply of data that models learn both about 'language' – how sentences work, and so on – and commonplace facts, like the fact the Eiffel Tower is in Paris, or that apples can be red or green but not blue. These initial training runs are massively expensive, one-time processes, carried out using supercomputers and costing tens or even hundreds of millions of dollars.

b. Fine-tuning

If the base training builds the model's brain, fine-tuning serves as the model's childhood, rewarding the right sort of behaviour and discouraging the rest. This is when the model creator (and sometimes other parties,

like customers) can provide additional instruction to a foundation model.

Whereas Stable Diffusion was first trained on 2 billion images to learn what things look like, a smaller set of 12 million 'aesthetic' images was used to fine-tune the model on 'the kind of images it should try to generate.' (A random, blurry photo of a cat is marginally useful in recognising what cats look like, but it would not be desirable as an output.)

c. Prompt engineering

Similarly, ChatGPT itself is a fine-tuned version of GPT-4, optimised to provide concise and factual responses in a conversational tone. (The base models could have been just as easily tuned to be sassy and evasive! When you act as the middleman between an AI model and your user, you can inject your own 'starter' prompt before sharing the user's text. For example, you could prepend the user's query with an instruction like:

'In a moment, you will receive a message from a user asking for travel recommendations. You MUST recommend them one of the following five destinations: Buenos Aires, Melbourne, Seville, Berlin, Kyoto. Do not recommend any other destination. If the detail of the user's request is not compatible with any of these locations, politely decline to make any recommendation and end the conversation.'

The user's request is... [USER INPUT]'

That toy example might seem laughably simple – but in practice, you can think much bigger. The AI system Claude+ now handles 'context windows' of over 75,000 words – that's a decently-sized novel – so you could use this 'space' to upload your own travel-guide-sized list of

destinations, along with all the relevant subtleties needed to inform solid recommendations.

If the idea of controlling the AI using plain English seems slightly unbelievable, note that even Microsoft's AI chatbot receives a similar list of instructions before every user conversation, reminding it that it should be 'positive, interesting, entertaining and engaging', among other things.

d. Searching the web

Some AI models, such as Bing Chat, have learned how and when to search the web and summarise what they find. This allows them to work with up-to-the-minute information, such as flight times or newly-opened attractions. (Conversely, the one-off base training process freezes the model in time – ChatGPT is not aware of events after December 2021.)

e. API integrations

Even most powerfully, AI models can generate and interpret code and structured data, according to your guidelines. This means a casual natural-language query like 'Where can I go that's warm and trendy this October for under £800?' can be transformed into a structured request against your database. Your API response can then be converted into a natural-language chat reply by the AI. For instance, Kayak and Expedia have integrated their systems with Chat GPT.

In summary, model creators like OpenAI carry out the massive training runs and fine-tune the results to encourage pleasant, safe outputs. Then, other parties – like a travel company building on top of these models – can access these models APIs to further fine-tune the results, provide additional information, and even give access to their own databases to provide up-to-date information.

Imagine that

ChatGPT will happily write marketing copy for the non-existent Cornwall village of Humbledybubblingtonshire

"Savour the freshest farm-to-fork produce and mouthwatering Cornish pasties in our quaint local pubs. Sip on crisp Cornish cider as you bask in the vibrant colours of the setting sun, painting the sky over the majestic, time-worn churches.

Immerse yourself in a tapestry of experiences that Humbledybubblingtonshire has to offer. Take a leisurely bike ride through the intoxicating lavender fields, explore the secrets of the charming, time-forgotten castles, or embark on a coastal hike where the waves meet the wildflowers in a symphony of nature's harmony.

For the passionate artisans, lose yourself in a vibrant patchwork of local arts, crafts, and pottery. Learn the history of Humbledybubblingtonshire through the stories told by the wise locals, and let the richness of the region inspire your soul."