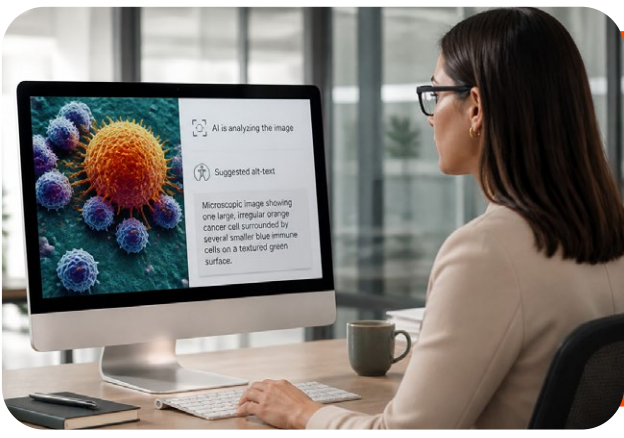


Improving Accessibility with Automated Alt-Text Creation for Scientific Images



Case Study

Client Overview



A life sciences content provider relied on Subject Matter Experts (SMEs) to manually create alt text for complex scientific images. Like all traditional processes it was labor and time-intensive, and difficult to scale. Significantly, the existing descriptions often lacked the detail needed to support user comprehension. To fix this, the enterprise needed a solution that could accelerate production while sharpening alt-text accuracy.

Straive developed an AI-assisted alt-text solution that combined a Large Language Model (LLM) with multiple machine learning models and a purpose-built quality-control module. The solution interpreted image content, generated contextual descriptions, and enabled experts to efficiently review and refine the output.



The new accessibility engine slashed alt-text generation time by **50%** and improved description accuracy by **40%**.

The Challenge



Transforming complex life sciences content into fully accessible learning materials presented a critical operational bottleneck for the enterprise.

— Challenge Area —

— The Reality —

Surface-level tagging

Existing alt text named basic objects without describing the science behind it.

Resource misallocation

Using top-tier SMEs for low-leverage production of al-texts.

Contextual Blindness

A compromised user experience for assistive-tech learners.



The mandate for Straive:
Scale alt-text production without factual drift.

The Solution

To meet the dual mandate of high-speed production and strict scientific rigor, Straive designed a hybrid pipeline that pairs AI-generated descriptions with human-in-the-loop accuracy checks.



Deployed a customized LLM capable of transforming biological processes into clear, contextual narrative descriptions.



Integrated multiple machine learning models to deconstruct and decode every layer of complex diagrams before generating alt text.



Transformed SMEs from writers to editors via a custom review interface, eliminating manual drafting fatigue and review bottlenecks.



Straive Solution: Decoding complex diagrams with multi-model AI to deliver alt-text at enterprise scale with scientific precision.

Key Capabilities

Straive's end-to-end, AI-enabled accessibility solution is powered by the following core capabilities:



Automated Scientific Alt-Text:
Generates audit-ready descriptions engineered for screen readers and compliance standards.



High-Volume Consistency:
Maintains unbroken quality, formatting standards, and depth across thousands of visual assets.



Multi-Modal Visual Intelligence:
Deconstructs complex visuals, detecting fine-grained structures and spatial flows in seconds.



Frictionless Workflow Integration:
Embeds into existing production pipelines to achieve compliance without operational disruption.



High-Fidelity Context Mapping:
Expresses complex science in precise narrative form with zero loss of depth or rigor.



Expert-Verified Precision:
Blends AI drafting speed with targeted SME oversight to guarantee flaw-free accuracy.

Impact and Results

Straive's AI-assisted workflow generated the initial alt-text drafts, allowing the SMEs to review and refine more images in less time.



50%
reduction in
alt-text
generation
time



40%
improvement in
alt-text
accuracy



More complete
descriptions of
complex
scientific images



Better access to
visual information
for learners using
assistive
technologies



More effective
use of
specialist
expertise



Greater
scalability
across content
production



Faster TAT, AI-powered scale, expert-verified precision

Built for Use Across Industries

Although the solution was developed for life sciences content, it can be customized for other industries that rely on complex, information-rich visuals. For example, it can be used for:

- Generating descriptions for charts, illustrations, infographics, and academic figures in publishing
- Describing anatomical images, clinical diagrams, medical workflows, and educational materials in healthcare and pharmaceuticals
- Making courseware, assessments, and digital learning resources more accessible in higher education.
- Interpreting technical diagrams, equipment illustrations, and process flows in engineering and manufacturing
- Explaining charts, dashboards, and data visualizations in accessible formats in financial services.
- Improving access to public information, reports, forms, and digital services in government.
- Supporting the efficient production of accessible visual content at scale in media and e-learning.

The models, terminology, validation rules, and quality checks can be configured for different content types and subject areas. This makes the solution a repeatable accessibility capability rather than a one-time automation project.

Turn Accessibility into a Scalable Content Capability

Complex visuals should deepen understanding, not create barriers.

Straive helps organizations combine AI, domain expertise, and structured quality control to produce accurate alt text faster and at scale.



Talk to Straive about building an AI-assisted accessibility workflow for your content.

About Straive

At Straive, we operationalize Data Analytics and AI for global enterprises and work with several Fortune 500 companies. We don't just build top-tier data analytics and AI solutions — we integrate them seamlessly into your core workflows. This approach drives enhanced efficiency, improves user experience, and boosts client revenue, setting you apart from the competition.

Straive serves clients in various industries, including Banking and Financial Services, GCC, Retail and CPG, Media, Sports and Entertainment, EdTech, Science and Research, Logistics and Supply Chain, Education, and Pharmaceutical and Life Sciences.

Our strategically positioned resource pool operates in ten countries: the Philippines, India, the United States, Nicaragua, Vietnam, the United Kingdom, Singapore, South Africa, UAE, and Canada.