

# STAŠA BUGARSKI

## PRODUCT PORTFOLIO



## NUTRIENT | Project: AI Assistant

Nutrient is a leading provider of document processing SDKs and APIs, enabling developers and enterprises to manage complex document workflows with performance, scalability, and compliance with global standards such as PDF/UA and WCAG.

Building on this foundation, the AI Assistant project introduced natural language interaction with documents, allowing users to chat, search, compare, and edit large or multiple files. This initiative positioned Nutrient at the forefront of a new standard in usability, making document handling more intuitive and accessible for all users.

### Problem

End users struggled to understand, navigate, and extract information from long, complex, or grouped documents. At the same time, 'chat with your documents' was becoming an expected capability, driven by the adoption of generative AI by major platforms such as Adobe. Customers were looking for a solution that could address both challenges: making documents easier to work with while also meeting rising user expectations and market standards.

### My Role

- Led customer discovery to understand expectations across platforms (desktop vs. mobile) and requirements such as security, accuracy, data privacy, performance with large documents, and integration flexibility.
- Translated insights into product requirements and roadmap priorities, in collaboration with engineering and design.
- Aligned stakeholders on delivering a cross-provider solution, supporting major LLM providers and on-premise/local models.

### Actions & Solution

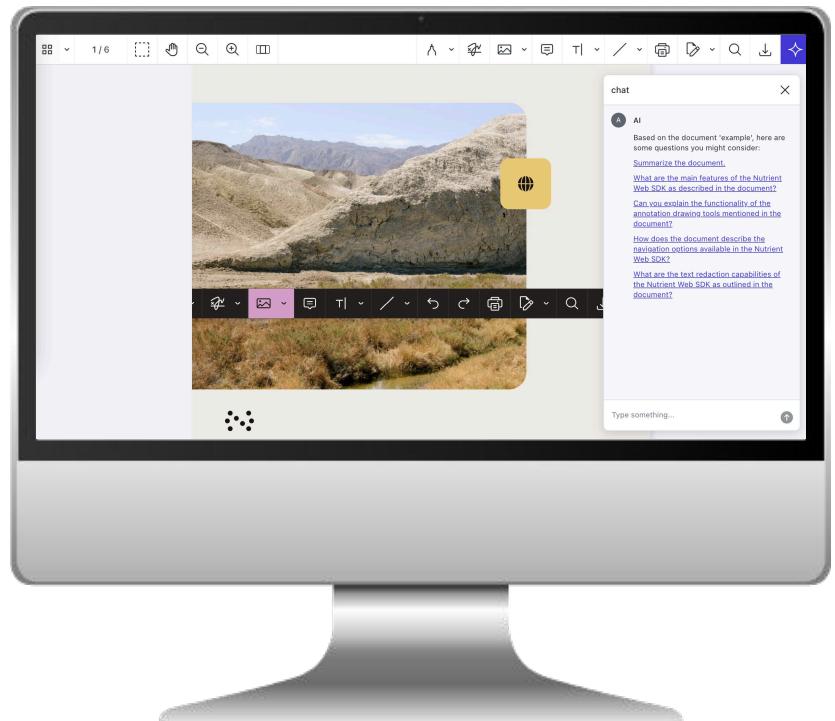
- Integrated support for multiple model providers (OpenAI, Microsoft Azure OpenAI Service, Amazon Bedrock, and local LLMs).
- Designed SDK features for natural language querying, contextual Q&A, cross-document search, comparison, and inline editing (redaction).
- Delivered APIs and UX patterns that balanced simplicity with flexibility for diverse customer needs.
- Prioritised ease-of-use to ensure immediate value for end users, while maintaining flexibility for enterprise customers.

### Impact

- Enabled customers to ship competitive products faster, keeping pace with market leaders.
- Improved usability of large and complex documents, lowering friction in knowledge discovery.
- Established a foundation for advanced AI workflows within Nutrient SDK.

### Next Step

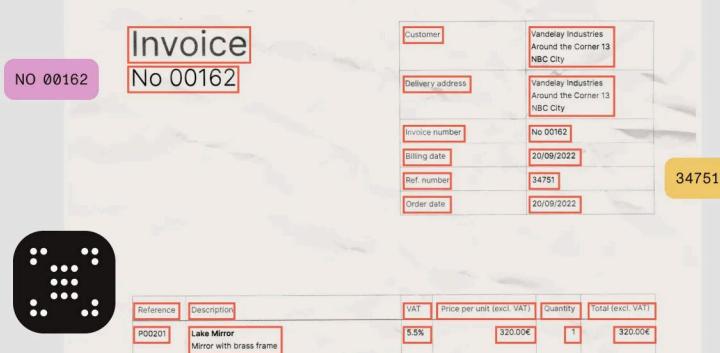
Enabling on-device AI for lightweight, offline use, leveraging Apple's foundation model for iOS and Google's Gemini Nano for Android. This ensures customers can deliver fast, private, and reliable AI-driven document interactions even in mobile or low-connectivity environments.



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## PRODUCT PORTFOLIO

Nutrient



## NUTRIENT | Project: VLM Integration for OCR Improvements

Nutrient is a leading provider of document processing SDKs and APIs, enabling developers and enterprises to manage complex document workflows with performance, scalability, and compliance with global standards such as PDF/UA and WCAG.

To push these capabilities further, we explored the use of Vision-Language Models (VLMs) to enhance OCR accuracy and layout understanding in complex, noisy, or low-quality documents. This project aimed to simplify the path to high-quality documents by combining cutting-edge AI with Nutrient's proven expertise in document processing.

### Problem

Traditional OCR (optical character recognition) engines often failed when documents contained non-standard layouts, tables, or degraded quality (noisy, complex, or low-quality documents). Errors at this stage cascaded into downstream processes, producing unreliable data and increasing the need for manual corrections. Customers needed higher accuracy and better structural understanding to unlock reliable automation.

### My Role

I led the product discovery and research into the feasibility of using VLMs for document processing. This included evaluating open-source and commercial VLMs, defining evaluation benchmarks, and aligning internal stakeholders around opportunities for improved OCR accuracy and semantic understanding.

### Actions & Solution

- Ran proof-of-concept experiments with SmolDocling and other emerging VLMs.
- Introduced multi-zonal document analysis via VLMs to segment and understand documents before OCR.
- Applied VLMs to classify documents upfront, enabling dynamic adjustment of OCR parameters for better results.
- Leveraged VLMs to separate noise from content, preventing common misinterpretations in noisy documents.
- Designed benchmark tests across degraded scans, tables, and mixed layouts, building dashboards to quantify performance gains.

### Impact

- Achieved ~30% improvement in OCR accuracy compared to baseline.
- Significantly reduced error rates on noisy, low-quality documents, cutting down on manual review and corrections.
- Reduced manual correction effort and unlocked higher reliability for downstream AI-powered workflows.
- Positioned Nutrient uniquely: unlike competitors who embed VLMs directly as OCR, we use VLMs before OCR as a pre-processing step. This approach leverages our already strong OCR algorithms while making them significantly more effective.

### Next Step

We are exploring the creation of a proprietary model optimized for document understanding, trained on large and diverse datasets available through Nutrient. Unlike generic VLMs, this model would be specialized for document layouts, structures, and edge cases common in enterprise workflows. The goal is to deliver a secure, high-accuracy solution that sets a new industry standard, giving Nutrient a proprietary advantage and our customers a smarter, more reliable way to process documents.

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## PRODUCT PORTFOLIO

Nutrient



## NUTRIENT | Project: Accessibility & PDF/UA Compliance

Nutrient is a leading provider of document processing SDKs and APIs, enabling developers and enterprises to manage complex document workflows with performance, scalability, and compliance with global standards such as PDF/UA and WCAG.

Building on this foundation, we invested in accessibility features to help customers meet compliance requirements while ensuring documents are usable by all people, including those relying on assistive technologies. This initiative positioned Nutrient as a partner in not only performance and accuracy, but also inclusivity and compliance.

### Problem

Enterprises increasingly face legal and market pressure to make digital documents accessible (PDF/UA, WCAG 2.2). Existing tools often produced incomplete or inconsistent tagging, making documents hard to navigate with screen readers and exposing organizations to compliance risks. Customers needed a reliable way to generate accessible PDFs at scale.

### My Role

- Led discovery with customers across industries (finance, public sector, education) to identify accessibility pain points and compliance requirements.
- Translated regulatory standards (PDF/UA, WCAG) into concrete product requirements.
- Worked with engineering to design features for auto-tagging, logical tab order, alt text, etc.
- Collaborated with design to ensure accessibility support extended beyond documents into SDK UI.

### Actions & Solution

- Developed SDK features that auto-tag and structure PDFs to meet PDF/UA standards, ensuring full screen reader compatibility.
- Implemented logic to preserve existing tags during processing operations (e.g., splitting, merging, redaction), so documents remain compliant after transformations.
- Integrated logical tab order, keyboard navigation, and focus visibility for interactive elements.
- Added support for alt text on images, form fields, annotations, and multimedia.
- Built validation tools to check PDF/UA compliance before distribution.

### Impact

- Enabled customers to meet PDF/UA and WCAG compliance at scale, helping them align with key accessibility regulations such as the European Accessibility Act (EEA) and the Americans with Disabilities Act (ADA). This reduced legal and financial risks, and saved significant potential costs by avoiding compliance fines.
- Improved accessibility for end users, making documents easier to read, navigate, and interact with.
- Increased customer trust, particularly in public sector and enterprise clients where compliance is mandatory.

### Next Step

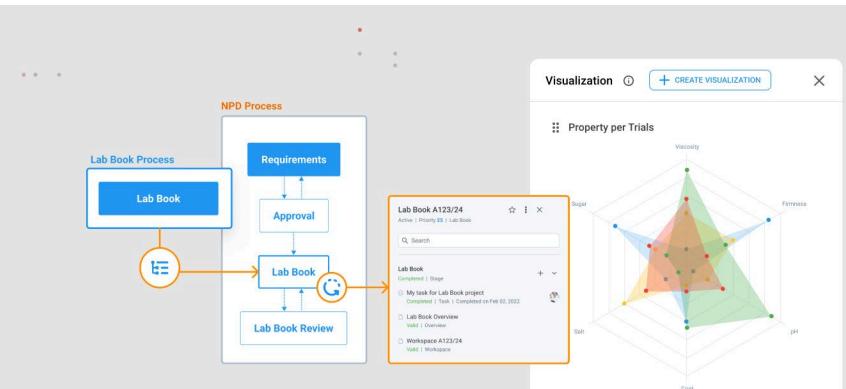
Exploring how to apply AI-powered accessibility by leveraging Vision-Language Models (VLMs) to automatically generate meaningful and context-aware alternative text for non-text elements in PDFs. The goal is to go beyond generic descriptions and provide accurate, useful alt text that enhances accessibility for screen reader users. This approach could dramatically reduce the manual effort required to tag images, charts, and graphics, while ensuring consistency and compliance with PDF/UA and WCAG standards.

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## PRODUCT PORTFOLIO



Alchemy



## ALCHEMY | Project: Strategic Shift in Product Architecture

Alchemy Cloud is a B2B SaaS for workflow digitalization, helping companies in the specialty chemicals industry move from analog, lab-based processes to fully digital workflows. Covering the entire vertical, it supports every role and task across the industry, with the goal of accelerating innovation by capturing structured, AI-ready data throughout the product development lifecycle.

### Problem

The original product was designed as a fully flexible system, assuming each company would digitalize unique workflows. In practice, this caused onboarding challenges, heavy support needs, and inconsistent data, making it difficult for customers to adopt and for the platform to deliver on its AI-driven vision.

### My Role

- Led usability testing and discovery with customers to identify adoption challenges and pain points.
- Synthesized findings and aligned stakeholders on the need for a more opinionated product direction.
- Worked across engineering and design to define the new data and UX architecture.

### Actions & Solution

- Redesigned data models to enforce consistent, structured information.
- Simplified configuration layers to reduce complexity and technical debt.
- Restructured UX to provide out-of-the-box workflows that were still configurable within clear boundaries.
- Drove adoption strategy ensuring faster onboarding and smoother customer experience.

### Impact

- Reduced onboarding time and support load.
- Delivered consistent, AI-ready data that enabled advanced analytics.
- Improved customer adoption and long-term retention.
- Established a foundation for Alchemy Cloud's AI strategy and product scalability.

The screenshot displays the Alchemy mobile application interface. On the left, a sidebar shows the 'Process Name A' study structure, including sections like 'Product Development Start', 'Recipes & Tests', and 'Formulations'. The main screen shows a detailed view of the 'Thickener Study\_S001' trial, listing 'General Information' (Name: Thickener Study\_S001, Starting Formulation: AB100\_056), 'Trial #', 'Trial 1', 'Trial 2', and 'Trial 3' (AB102\_001, AB102\_002, AB102\_003). Below this is a 'Description' table and a 'Formulations' section with a table showing materials, unit, quantity, and processing steps for three trials. The bottom navigation bar includes icons for MATERIAL, FORMULATION, STEP, PROCESSING, and COMMENT.

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The screenshot displays the Alchemy AI platform's user interface. On the left, a 'MODEL TRAINING' section shows a table of properties (Cost, VOC, Spray Transfer Efficiency, Neutral Salt Spray, Ethylene Glycol Substitution) with their values and a 'Model accuracy (%)' of 79.81. A 'Train AI' button is highlighted. In the center, a 'DOE' section shows a table of recommended trials with 15 rows. On the right, an 'ML' section shows a table of properties (Cost, VOC, Spray Transfer Efficiency) with target values and confidence levels. A green box labeled 'ML' is overlaid on the ML section. A woman in a lab coat is shown working on a computer in the background.

## ALCHEMY | Project: AI-Powered Formulation

Alchemy Cloud is a B2B SaaS for workflow digitalization, helping companies in the specialty chemicals industry move from analog, lab-based processes to fully digital workflows. Covering the entire vertical, it supports every role and task across the industry, with the goal of accelerating innovation by capturing structured, AI-ready data throughout the product development lifecycle.

### Problem

Traditional formulation development relied on manual, expert-driven methods, which were slow, inconsistent, and limited in exploring the full range of possible combinations. Customers needed a faster, more reliable way to identify optimal formulations while reducing trial-and-error in the lab.

### My Role

I partnered with data scientists and domain experts to define requirements, validate outputs, and ensure the workflow balanced automation with usability. I focused on making advanced capabilities accessible without overwhelming users, while still offering flexibility for more technical teams.

### Actions & Solution

- Designed an AI-driven “auto loop” for formulation design, integrating Design of Experiments (DOE) with machine learning models.
- Automated the process of training models on available data to recommend optimal formulations based on target criteria and rules.
- Built a layered UX: everyday users received instant, high-value recommendations, while advanced users could access detailed tuning options and experiment design.
- Incorporated fallback logic: when insufficient data was available, the system guided users through the minimum number of DOE experiments to expand the dataset.

### Impact

- Delivered formulations with proven performance beyond what lab technicians could achieve manually.
- Dramatically reduced time and effort required for formulation development.
- Balanced accessibility and power, ensuring both non-technical and advanced users could succeed.
- Positioned Alchemy Cloud as a leader in AI-powered formulation within the speciality chemicals industry.

The screenshot shows two side-by-side laptop screens. The left screen displays the 'Product Development Start' section of the Alchemy Cloud interface, showing a table of materials (Material 1, Material 2, Material 3, Material 4) with their quantities and a table of tests (Viscosity @ 0°C, Viscosity @ 50°C, Viscosity @ 70°C, Viscosity @ 100°C) with their results. The right screen shows the 'Study Overview' section, which includes a 'Machine Learning Recommendations' table. This table lists four generated formulations with their properties: Viscosity (mg/cm²), Density (g/cm³), pH, and Cost. The first formulation is highlighted as the best performing model.