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Truth and AI

Building Fairer, Safer, More Sustainable Economies

Artificial intelligence can be a powerful tool for good in the world – at Altana we are working across the public and private sectors to build a fairer, more secure, and more sustainable model of global commerce. In the process, we are helping to build resilience for critical economic and security infrastructure, combat modern slave labor, fentanyl trafficking, and sanctions evasion, and support sustainability. Our key observation is that artificial intelligence (AI), including generative AI, that is tied to a definitive source of truth can provide reliable, explainable insights for previously intractable problems while respecting data sovereignty, privacy, and security. While acknowledging the risks of AI that vary by application, we want to emphasize these positive elements of AI applications in boosting economic resiliency, ethical trade, and national security.

Altana applies AI to billions of public and non-public data points to deliver the only dynamic, intelligent map of the global supply chain: the Altana Atlas. Our AI platform provides governments, the biggest logistics providers, and the most important global businesses with unprecedented supply chain visibility and insights. Through the Atlas, users can understand the distant origins of products well beyond direct suppliers, discover trading relationships deep in their networks, measure labor and environmental impacts, identify related risks and opportunities, and collaborate to manage all of it.

We use hybrid AI and machine learning systems to both construct and analyze a "digital twin" network model of the global supply chain. We combine a variety of AI systems, including generative AI, with an underlying model of the global supply chain to generate actionable insights that could only be delivered through AI.[1] We believe that similar benefits apply across similarly complex scientific and technological domains.

AI, especially when tied to a reliable underlying source of truth, delivers powerful insights when operating on complex systems that would otherwise be impossible to discern. The superhuman speed of action, breadth of knowledge, and multilingual capabilities of AI systems enable us, in ways that would not be feasible without this technology, to better construct and generate insight on a digital twin of the world's supply chain. Without AI we would not be able to construct an accurate view of the global supply chain nor to effectively generate insight on the resulting network model containing 2.5B records and 450M+ companies. The complexity would be too great.

Utilizing AI yields benefits that include targeting of illicit trade, such as fentanyl production, and analysis of complex supply chains at scale to enable better national economic resiliency. In the targeting case, Altana applies AI to target illicit fentanyl production networks. AI allows us to both construct a network representation of the global supply chain within which we can understand illicit activity, target this illicit network activity, and then summarize the underlying illicit chemical transactions across languages. This modeling of global commerce requires processing billions of records and would not be possible without AI. Similarly, we have found that AI enables deep understanding of multi-tier value chains for production of physical goods. AI powered analysis is necessary to provide global insights that can lead to near-shoring or friend-shoring and boost manufacturing capabilities and supply chain continuity, both of which are key to a more resilient economy. The complexity of modern production systems requires AI to understand them at scale – no team of humans can model out value chains across multiple tiers with the speed required by global commerce.

We believe the following principles are key to achieving reliable AI systems with maximum benefit and minimum harms:

- **AI systems should be based on a source of truth.** Inputs should be specific to the domain in question. By tying AI systems to domain-specific (medical, industrial,

[1] The material in this document, unless otherwise specified, refers to this hybrid combination. Modern AI, such as Generative AI, provides substantial value in these applications.

environmental and so forth) and ensuring they reference underlying source documents, trust, reliability, understanding, and accountability is strengthened, and potential errors and harms are reduced. At Altana, we tie our AI tools to a structured, underlying network model of the global supply chain. Other domains have similar knowledge bases to which to tie AI – medical databases, regulatory documentation, and more. Without reliable information, AI will hallucinate or fail; bad inputs mean bad outputs. But with a verifiable source of truth available to the models as a reference, AI can outperform humans in both the unification of disparate datasets across information silos and the generation of insight on that unified knowledge base.

- **Specialization matters.** By tuning AI systems for a specific domain, and focusing on auditing and improving their performance in that domain, efficacy, safety, and trust are boosted. At Altana, we have specialized models trained on the largest body of supply chain data in the world, which creates a powerful training loop.

- **Federated models can overcome information silos while preserving data privacy.** Data privacy, sovereignty, and security must be preserved. By deploying AI through client-separate deployments rather than commingling data, federated models can, where appropriate, share derived insights *without* sharing the underlying data. The exact style of federation varies by AI model and dataset, but overall AI systems can enable enhanced privacy and efficacy through federated data and learning.

- **AI should be asked to "show its work."** Transparency and auditability breed trust. When AI models are built to explain and report the logic trail that led to their analyses, insights, and recommendations, humans can correct errors, and help to ensure a training feedback loop that results in better and better models and insights while maintaining trust in the overall system.

- **Safety and cost/benefit analysis matters**. The risks and benefits of using AI to supplement human decision making varies widely by application. In Altana's case, our work would be impossible without AI; the visualization, analysis, management and regulation of global supply chains is such a complex task that AI is a huge improvement over the current state of play.

- **Public-private collaboration unlocks enormous value.** Specialized AI platforms and architectural models like the federated approach we employ at Altana create enormous opportunities for government and the private sector to collaborate together in pursuit of shared mission objectives across a common operating picture. It's critical for the government to create the conditions that allow for such partnerships to flourish.

In short, we find that applied AI brings substantial benefits to everything impacted by the movement of physical goods, from national and economic security to global commerce itself. We expect similar results in important, complex domains such as medicine, scientific research, and more. While it is clearly imperative that Congress pay close attention to the wide range of

risks and opportunities across the enormous number of potential use cases, it is also imperative that Congress distinguish between high and low-risk use cases, as well as the distinction among areas in which AI can bring significant improvements over the current level of performance, in contrast to fields where the gains are more marginal. The dialog about the development and use of AI is certain to be long and robust but one thing is clear: our experience at the forefront of applied AI leads us to be more optimistic than ever about its potential to bring real, lasting benefits to the world.