FreshGravity™
Driving Digital Success®

Artificial Intelligence Capability

Fresh Gravity's robust and mature AI capability is led by highly-accomplished experts in Machine Learning (ML) and Artificial Intelligence (AI). Our team of Data Scientists, Data Engineers, and ML/Deep Learning researchers includes advanced degree holders from universities such as U.C. Berkeley, University of Illinois at Urbana-Champaign, and the Indian Institutes of Technology.

What Sets Fresh Gravity Apart in the Domain of AI

We have an impressive roster of experts in key disciplines, including:

» Natural Language Processing, Chatbots, and Virtual Agents

» Deep Learning (e.g., Recurrent Neural Networks)

» Computer Vision

» Probabilistic Graphical Models (e.g., Markov Decision Processes)

» Intelligent Automation

Our Consultative Approach and Business Acumen

We help our clients understand and think in terms of practical Artificial Intelligence for enterprises:

No black box algorithms: at Fresh Gravity we've cultivated a highly-disciplined design philosophy. We tailor the analysis to your business needs from the beginning and thoughtfully integrate solutions into your enterprise system landscape. At all points in between, we continuously test assumptions and make sure that the end results will achieve the intended impact.

User acceptance is key: end users need to understand what they're getting and why they can trust what's under the hood. We are adept at explaining complex concepts in "plain English" using visualizations and analogies to make the intuition clear and promote

Computer Vision representation of the bounding boxes concept to classify distinct object types

Examples of Past Projects Include

» **Intelligent Automation: for Semiconductor Manufacturing:** optimized a manufacturing line with an extremely low tolerance threshold by providing a robust model for anomaly detection at timely points in the process

» **Probabilistic Graphical Modeling for the Life Sciences:** modelled a sequential and tightly regulated pharmaceutical drug's adherence data to accurately identify anomalous events within the workflow. The accurate identification is essential to mitigate patient adherence lapses on this terminal drug which can have negative health effects and reduces revenue to the business.

» **Shipping Container Automation for Hazardous Materials Shipping:** optimized the combinations of items that can be safely shipped in tandem, to minimize high shipping costs to the client

» **Predictive Finance Analytics for Financial Services:** identified customer prospects, improved customer satisfaction, and optimized sales and marketing, by using predictive and prescriptive analytics

» **Predictive Healthcare Analytics for Healthcare:** addressed requirements of payers and providers by profiling consumers, managing patient care, identifying suspicious providers, improved case management, and reduced medical costs

» **Natural Language Translation for Cyber Security:** converted marketing campaign groups to SQL queries, improving customer communication

» **Predictive Outcomes for Rider Safety:** based on seat belt usage, texting while driving, and other driver survey data, predicted outcomes and made recommendations used for targeted traffic safety campaigns

» **Incident Prediction for Emergency Response:** predicted where emergency calls are most likely to occur, up to a year in advance

» **"Visual Search" for E-Commerce:** drastically sped up image searches on e-commerce websites

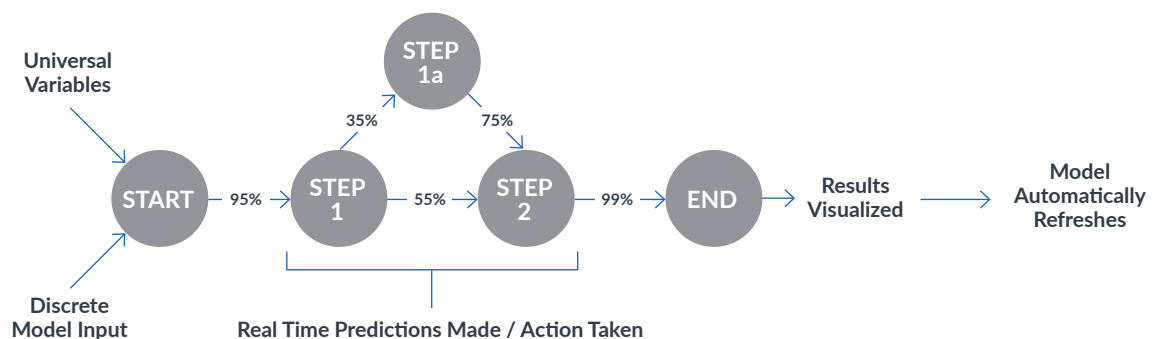» **Metadata Lineage and Associated Risk Identification**

Offerings Include

» **Intelligent Automation for Manufacturing:** using "Explainable AI"

» **Natural Language in Databases:** translating natural language into traditional SQL queries

» **Intelligent Automation for Logistics:** shipping optimization & rule inference

» **Computer Vision within Intelligent Automation:** information extraction from images for decision support

» **Metadata Management (GraMME):** the modern, open source, vendor neutral, metadata management solution powered by discrete AI functions that creates a streamlined, lightweight solution superior to traditional tools

Quick Wins and Tangible Value

We are laser-focused on the tangible value to your business. Beyond what's in the headlines, AI is transforming business decision making in many other areas. We pride ourselves on determining the "right place to start" to quickly generate ROI and lay the groundwork for bigger projects. That is why clients trust us to deliver on the most advanced "high-effort and high-benefit" AI solutions. When designing intelligent systems, our insistence on practical use leads us to dig deeper. We often select unconventional models that are particularly well-suited to our clients' needs.

Example of Exceptional Methods: Probabilistic Graphical Models

Universal Variables

STEP 1a

35%   75%

START → 95% → STEP 1 → 55% → STEP 2 → 99% → END → Results Visualized → Model Automatically Refreshes

Discrete Model Input

Real Time Predictions Made / Action Taken

Diverse Capabilities in Many Domains of Data Science

AI systems shouldn't and do not operate in a vacuum from the rest of the business and its' various data sources. For truly "intelligent" decision-making, cognitive systems require a combination of multi-disciplinary tools working together. The AI capability works closely with the Gravity Labs (our R&D arm) to deliver comprehensive solutions. Our deep expertise in APIs also allows us to provide the critical connective tissue for connecting data and linking our intelligent systems to real-world impact.

Example Experience Includes: Visual Search for E-commerce Cataloging

Proprietary Product Overview: many e-commerce sites are trying to invent new ways to efficiently search through their catalogs. Current search methods are highly inefficient as they are based on metadata associated with products and do not consider the finer features of products like designs, color, exact shapes, etc. Our proprietary tool utilizes state-of-the-art deep learning methods such as Convolutional Neural Networks & unsupervised hashing methods for indexing large catalog image datasets for very efficient retrieval. In practice, training time is accelerated through transfer learning and performance is further improved through object classification methods.

Traditional Text Based User Search: "Blue Jeans"

Traditional Metadata Search Methods: Returns three images, blue sweaters, black jeans, and finally blue jeans. Not efficient or understanding of context.

Visual Search for E-commerce: Context-based image retrieval for only exactly what the user is seeking
because the catalog is properly indexed enabling searches that consider design, color, shapes etc.

Indexed Images:

Output Products: