# Artificial Intelligence 201

## BEYOND WRITING EMAILS

J. Langley,
Founder, Huntsville AI
CTO, CohesionForce, Inc
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# INTRODUCTION TO J. LANGLEY

What I do:
- Chief Technical Officer - CohesionForce, Inc
- Founder - Huntsville AI
- AI Huntsville - Workforce Development Committee
- Captain - Keel Mountain Volunteer Fire Department

I've been working with AI since around 2005, with my master's project at Florida Institute of Technology being an NLP based system for recommending web forum channels that best match a user's question.

I believe that the best way to ensure that AI is used for the greater good is to involve the greatest number of perspectives possible in its development, testing, and use.

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## LEVELS OF AI ADOPTION

1. Using AI without knowing it - Email spam filter, map navigation, voice recognition, social media feeds

2. **Actively using AI - ChatGPT, Copilot, other tools we'll cover in a moment**

3. Building AI Tools - Incorporating AI tools into products, training custom AI models, applying AI in new domains

4. Designing new AI models or approaches - Understanding how current AI models work, creating new AI models

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# AI TECHNIQUES

1. Natural Language Processing - Classification, Summarization, Generation
2. Computer Vision - Classification, Segmentation, Enhancement, Generation
3. Audio Processing - Recognition, Classification, Generation
4. Reinforcement Learning - Autonomous Vehicles, Robotics, Optimization
5. Recommendation Systems - Collaborative Filtering, Content Based, Implicit
6. **Generative AI - Text, Images, Audio, Video**
7. Agentic AI - Tool Calling, Decision Making
8. Robotics - Humanoid Robots, Autonomous Drones, Self Driving Cars

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## GENERAL GUIDELINES

- You are responsible for checking the correctness of any output.
- Be as specific as possible.
- It's called "Prompting" for a reason.
- Feel free to use AI to build better prompts.
- If it's not good enough, check back in a month.

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# DISCUSSION OUTLINE

To give us a framework for this discussion, we will center around a boutique jewelry store in Huntsville. The store is planning an upcoming sale and needs a strategy, images, and video for a marketing campaign.

We'll use:
- Deep Research to develop a strategy
- Image Genaration to create images for social media
- Video Generation to create videos for social media
- Text to Audio to create voice over for the video

Along the way, we'll pause and discuss how each of these might be useful in your daily life.

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# DEEP RESEARCH

Deep research is useful for complex, multi-step inquiries requiring information synthesis from numerous sources, such as creating market analyses, scientific literature reviews, or detailed project plans, and can also be used for personal tasks like product comparisons or travel planning.

**Example Prompt:** Conduct a deep research analysis on the use of AI for market research for a boutique jewelry store located in Huntsville, Alabama. Focus on identifying general retail and jewelry-specific trends in the area, analyzing the online and social media marketing strategies of competitors, and providing a data-driven plan for a major upcoming sale. Include examples of specific AI tools that could be used for demand forecasting, customer personalization, and competitive analysis.

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## Full Report

**Phase 1: Pre-Sale (4-6 weeks out)**

The primary objective during this phase is to build excitement, optimize inventory, and segment the audience for targeted outreach.

1. **Inventory & Demand Forecasting:** The boutique begins by feeding its historical sales data into a demand forecasting tool like Prediko. This initial step provides a data-backed plan for what products to stock and in what quantities for the sale, mitigating the risk of overstocking high-value items.[17]
2. **Competitive Intelligence:** In parallel, the boutique activates its competitive analysis tools, such as Prisync and Kompyte. These platforms monitor competitors' websites and social media for any planned promotions or marketing themes.[31] The information gathered is used to ensure the boutique's sale message is differentiated and highlights its unique selling points.
3. **Personalized Marketing & Teasers:** Using an AI content tool like Inkie, the boutique generates a series of teaser social media posts, blog articles, and email newsletters to build anticipation for the sale.[28] The email list is segmented, and AI-powered product recommendations are integrated into email campaigns, offering personalized suggestions to customers based on their past purchase history and browsing behavior.[20]

| Competitor | Key Business Model | Primary Online Channels | Noted Marketing Themes | AI-Relevant Weaknesses |
|---|---|---|---|---|
| | Legacy, Full-Service, Family-Owned | Website, Facebook [3] | Trust, Legacy, On-Site Service, Personalized In-Store Experience [3] | Limited e-commerce integration, social media is an informational "digital business card" [3] |
| | Personality-Driven, Custom Design | Website, Facebook [8] | Customization, Owner's Expertise, Community Trust [9] | Simple website, limited product showcase, minimal digital-first content [8] |

# IMAGE GENERATION
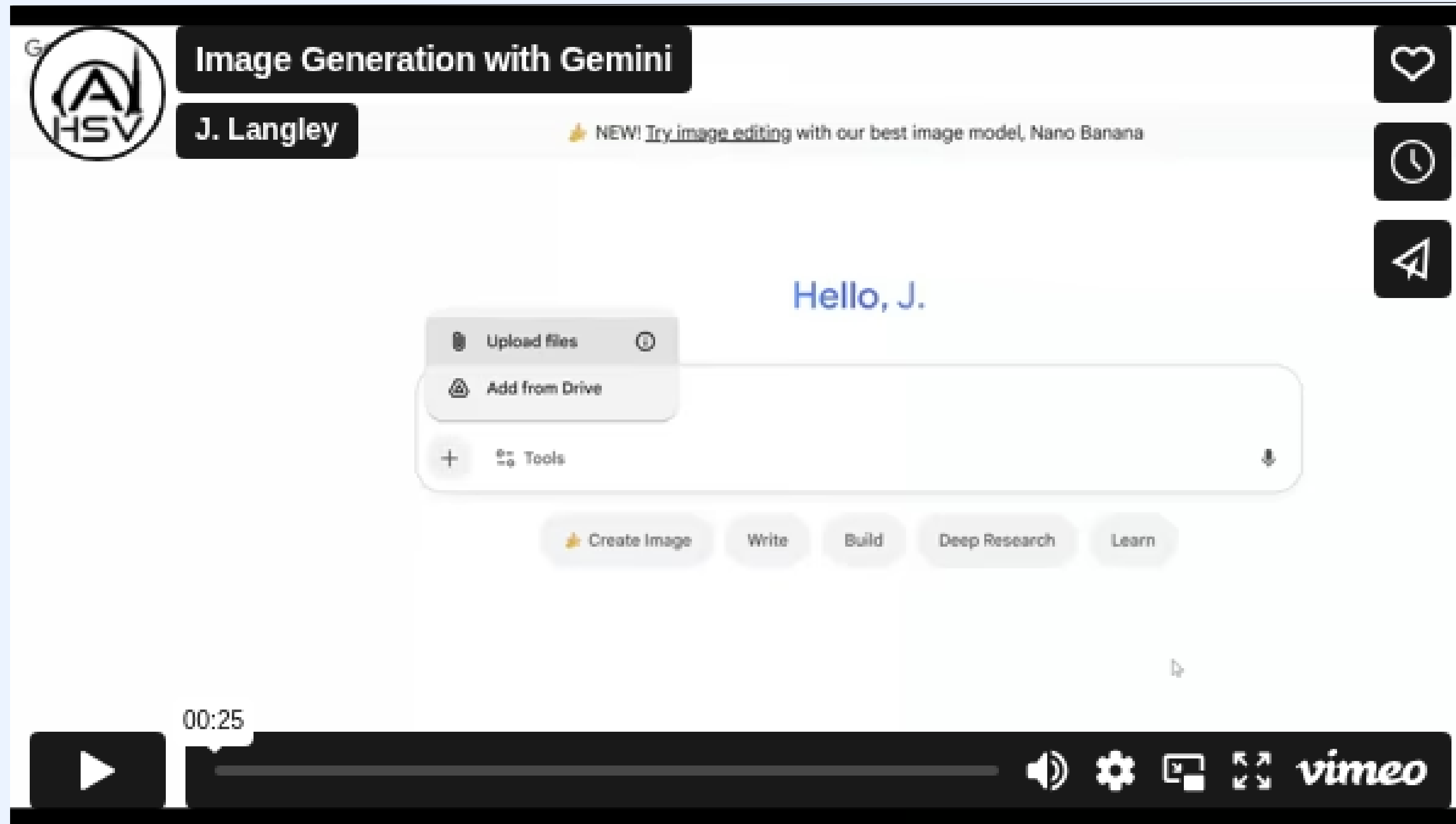
# VIDEO GENERATION



Pan away from the starting image. You are inside of a boutique jewelry store that also has a sales associate and another shopper inside. It's a small store with a glass storefront. There are glass cases containing rings, and necklaces. There are bracelets and earrings on stands on top of the cases.



kling_20250906_Image_to_Video_Pan_away_f_5672_0 INCLUDES AI

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