

SESSION 3: AI 101

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Artificial Intelligence 101

Georgia Airports Association

Session 3 | Edgar H. Wilson Convention Center, Ballroom ABC

Wednesday, October 15, 2025, 3:15 pm – 4:00 pm



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Agenda

Welcome & Session Goals

What is AI? + Airport Use Cases + Generative AI Options & Security

Conclusion + Resources + Questions

BONUS: Getting ahead with Generative AI

Welcome & Session Goals

- Understanding the different types of AI
- Inspire you to ask your co-workers, peers how they use AI
- Show Online Example of AI
- Inspire at least one new person to try generative AI

What is AI?

Machine Learning

Computer Vision

Natural Language Processing

Deep Learning

Generative AI



What is AI?

Machine Learning

- A subset of AI that trains algorithms to recognize patterns and **make predictions** from data.



Example

ML: **Detecting anomalies in passenger behavior** or ID badge swipe

Benefits:

- Early detection of potential security threats.
- Reduces reliance on manual observation.
- Scales across large airport environments.

Challenges:

- High false-positive rate if models are not tuned.
- Requires integration with multiple data sources.
- Privacy concerns for passenger tracking.

What is AI?

Computer Vision

- AI that enables computers to interpret and understand **visual data** like images and video.

 Example

CV: **Facial recognition** at checkpoints, baggage screening via X-ray

Benefits:
Speeds up identity verification.
Reduces manual document checks.
Enhances security and passenger convenience.
Challenges:
Privacy and biometric data protection.
Accuracy issues with lighting, angles, or occlusions/blockages.
Compliance with GDPR, CCPA, and aviation security standards.

What is AI?

Natural Language Processing

- AI that allows machines to understand and respond to human language.



Example

NLP: **Chatbots for passenger inquiries**, analyzing social media for threat indicators

Benefits:
Reduces call center load.
Provides 24/7 assistance.
Improves passenger experience with instant answers.
Challenges:
Must handle ambiguous queries.
Requires integration with backend systems.
Needs strong security for personal data.

What is AI?

Deep Learning

- A branch of ML using multi-layered neural networks to learn complex patterns.



Example

DL: Threat detection in X-ray images, voice interaction at kiosks

Benefits:
Speeds up self-service processes.
Enhances accessibility for travelers with disabilities.
Reduces physical contact (important for hygiene).
Challenges:
Must handle multiple languages and accents.
Noise in airport environments can affect accuracy.
Privacy concerns for voice data storage.

What is AI?

Generative AI

- AI that **creates new content** (text, images, audio, video) based on learned patterns.

 Example

GenAI: **Simulating threat scenarios**, generating synthetic X-ray images for training

Benefits:

- Expands training datasets without needing real dangerous items.
- Improves model robustness against diverse threat types.
- Enables scenario-based drills for security teams.

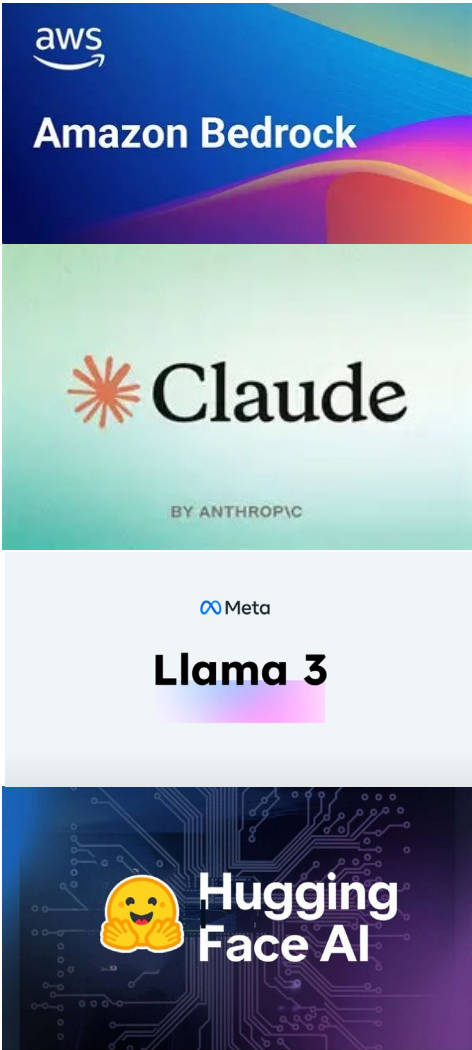
Challenges:

- Must ensure synthetic data is realistic and unbiased.
- Requires strong validation to avoid false confidence.
- Regulatory approval for training with synthetic data.

AI in Action: Generative AI Options & Security



GenAI Option	Security Concerns	Example Products
Private, Sandboxed AI Environment (Managed)	- Data leakage risk minimized but still depends on vendor - Requires strict network isolation and access controls - Compliance audits needed for cloud-based sandbox	Azure OpenAI in a Private VNet, AWS Bedrock with VPC
Third-Party Providers (Public SaaS)	- Higher risk of data exposure to external systems - Limited visibility into vendor's internal security - Potential regulatory non-compliance for sensitive data	OpenAI API, Anthropic Claude via API
Self-Hosted Models	- Full responsibility for securing infrastructure - Vulnerable to misconfigurations and insider threats - Requires strong patching and monitoring practices	LLaMA 3, GPT-J, Hugging Face Transformers deployed on-prem



Conclusion + Resources

Resources

- PARAS0064: AI in Airport Security (**Coming Soon**)
- AAAE ACT AI Interactive Guidance
 - <https://aaae.org/act>
- ACI-NA AI Committee
 - <https://airportsCouncil.org/committees-programs/business-information-technology/>

Online Resources

- [Coursera](#)
 - <https://www.coursera.org/learn/introduction-to-ai>
- [Association AI Professional Certification](#)
 - <https://learn.sidecar.ai/course/certified-association-ai-professional-fundamentals>

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Questions + Getting Ahead with Generative AI

Getting Ahead with Generative AI

Here is a quick 15-minute exercise to improve your skills with using generative AI:

- Prompt Chaining
- Verbosity Controls
- Trigger Deep Thinking
- Creating a Better Prompt

Examples using ChatGPT (prompt chaining – building “systems”)

Question:

“What are the pros and cons of using AI in my airport video surveillance system versus not using it?”

Examples of Each:

- YES: Nudge Phrases: “Think hard about this, Think deeply about this, Think carefully”
- NO: “This is critical or this is very important”
- Trigger deeper reasoning for high-stakes tasks where missing second-order effects could really hurt you.

Examples using ChatGPT (Verbosity Controls)

Question:

“What are the pros and cons of using AI in my airport video surveillance system versus not using it?”

LV: “Give me the bottom line in 100 words or less, use markdown for clarity and structure”

MV: “Aim for a concise 3-5 paragraph explanation”

HV: “Provide a comprehensive and detailed breakdown (600-800 words)”

Types:

- **Low-verbosity** outputs work best when we need only critical information
- **Medium-verbosity** works best when we need key takeaways PLUS context
- **High-verbosity** outputs are great for comprehensive documents like project briefs, research summaries, or reference materials for multiple teams

Examples using ChatGPT (trigger deeper thinking)

Question:

“What are the pros and cons of using AI in my airport video surveillance system versus not using it?”

Examples of Each:

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Examples using ChatGPT (Creating a better Prompt)

Question:

- “You are an expert prompt engineer specializing in creating prompts for AI language models, particularly ChatGPT 5 thinking model. Your task is to take my prompt and transform it into a well-crafted and effective prompt that will elicit optimal responses. Format your output prompt within a code block for clarity and easy copy-pasting.
##Here's my initial prompt

Initial Prompt:

- CEO
- CFO
- Airport Operations
- Airport IT

Airport Operations Lead –
Operational Resilience Copilot

Use Case: Real-time operational
optimization

Problem Solved: Operations
teams juggle flight schedules,
weather, passenger flow, and
resource allocation with limited
predictive tools.

Solution: Copilot integrates data
from flight management,
baggage handling, and ground
services to recommend gate
assignments, staff redeployment,
or contingency plans during
disruptions.

Benefits:

Improved on-time performance.
Faster recovery from weather or security
incidents.
Enhanced passenger experience through
smoother operations.

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Thank you and Questions