ARTIFICIAL INTELLIGENCE APPLICATIONS IN PROPERTY & CASUALTY INSURANCE



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Introduction

Artificial Intelligence Applications in Property & Casualty Insurance Training Course prepares insurance professionals to apply AI where it changes underwriting, claims, and pricing outcomes. Property and casualty insurers hold rich data: policy attributes, claims histories, telematics, imagery, and weather records. AI turns that data into faster decisions, sharper risk selection, and earlier fraud detection. It also raises fairness, explainability, and regulatory questions that insurers cannot ignore. This course covers both. It explains data foundations, model development, and application design. Furthermore, it applies underwriting models, claims triage, fraud detection, and pricing analytics. In addition, it develops model governance and regulatory compliance. As a result, participants deploy AI in insurance with measurable benefit.

Artificial Intelligence Applications in Property & Casualty Insurance Course Objectives

- Explain AI and machine learning applications across the insurance value chain.
- Assess data readiness including policy, claims, telematics, and imagery data.
- Apply supervised learning to risk classification and underwriting models.
- Apply claims triage models for severity and complexity prediction.
- Build fraud detection models for claims and application fraud.
- Apply pricing and rating analytics including GLM and machine learning approaches.
- Apply computer vision to property damage and aerial imagery assessment.
- Apply natural language processing to claims documents and correspondence.
- Evaluate explainability, fairness, and bias in insurance models.
- Apply model governance and regulatory compliance frameworks.

Course Methodology

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- Interactive lectures with real insurance AI and modelling cases.
- Underwriting, claims, and pricing model development workshops.
- Fraud detection and triage modelling exercises.
- Explainability and fairness assessment practice.
- Structured peer review with facilitator feedback on model governance proposals.

Who Should Take This Course

- Insurance data scientists and analysts.
- Underwriting and pricing professionals.
- Claims managers and fraud investigation staff.
- Insurance risk and actuarial professionals.
- Insurance technology and innovation leads.
- Compliance officers and internal auditors in insurance.

Artificial Intelligence Applications in Property & Casualty Insurance Course Outlines

Day 1: AI Foundations and Insurance Data

- AI and machine learning across the insurance value chain.
- Data sources: policy, claims, telematics, imagery, and external data.
- Data quality, completeness, and bias considerations.
- Feature engineering for insurance risk variables.
- Model development lifecycle in insurance contexts.
- AI use case identification and prioritisation.
- Case study: selecting an AI use case with clear business value.

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Day 2: Underwriting and Risk Selection

- Risk classification and segmentation methods.
- Logistic regression and gradient boosting for underwriting.
- Risk factor analysis and variable selection.
- Predictive models for loss frequency and severity.
- Portfolio monitoring and risk concentration analysis.
- Model calibration and lift chart evaluation.
- Workshop: building a risk classification model.

Day 3: Claims, Triage, and Fraud Detection

- Claims triage models for severity and complexity.
- Straight-through processing and automation rules.
- Fraud detection for claims and application fraud.
- Anomaly detection and network analysis techniques.
- Imbalanced data handling and false positive management.
- Investigation prioritisation and referral scoring.
- Workshop: building a claims fraud detection model.

Day 4: Pricing, Imagery, and Document Intelligence

- Pricing analytics: GLM versus machine learning approaches.
- Rating factor selection and interaction effects.
- Computer vision for property damage and aerial imagery.
- Natural language processing for claims documents.
- Automated document classification and extraction.

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- Customer segmentation and retention modelling.
- Workshop: applying computer vision to damage assessment.

Day 5: Explainability, Governance, and Regulation

- Explainability techniques: SHAP and local interpretable models.
- Fairness assessment and protected attribute handling.
- Model validation, monitoring, and performance drift.
- Governance frameworks and model inventory standards.
- Regulatory expectations on AI in insurance.
- Documentation and audit readiness for AI models.
- Course review, assessment, and action planning.

Conclusion

By successfully completing Artificial Intelligence Applications in Property & Casualty Insurance, participants will gain a thorough understanding of AI foundations and insurance data, underwriting and risk selection modelling, claims triage and fraud detection, pricing and imagery analytics, explainability, and model governance and regulation. They will also acquire practical skills in insurance data preparation and use case selection, underwriting and risk classification modelling, claims triage and fraud detection modelling, and pricing analytics, explainability and governance. In addition, the course prepares them to deploy AI in insurance with measurable benefit and regulatory confidence. Gentex Training Center delivers this programme with a strong focus on applied modelling technique and responsible AI deployment.

LEARN BOLD. **LEAD BEYOND**
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FAQs for Artificial Intelligence Applications in Property & Casualty Insurance course

Q1 What is the "Artificial Intelligence Applications in Property & Casualty Insurance" course about?

It is a five-day programme on applying AI across property and casualty insurance. It covers insurance data foundations, underwriting and risk classification modelling, claims triage and fraud detection, pricing analytics, computer vision and document intelligence, explainability, and model governance and regulation.

Q2 What are the key benefits of the "Artificial Intelligence Applications in Property & Casualty Insurance" course?

Participants improve underwriting accuracy, shorten claims handling, and detect fraud earlier. The course sharpens risk classification and pricing, strengthens triage and referral decisions, improves fraud detection while managing false positives, supports damage assessment through imagery, and builds governance that satisfies regulators and internal reviewers.

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Q3 What skills will I gain from the "Artificial Intelligence Applications in Property & Casualty Insurance" course?

Participants gain insurance data preparation and AI use case selection, underwriting and risk classification modelling, claims triage and fraud detection modelling, and pricing analytics, explainability and governance. These four skills cover the practical core of AI application in property and casualty insurance.

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Q4 What tools, methods, or standards are covered in the "Artificial Intelligence Applications in Property & Casualty Insurance" course?

The course covers AI and machine learning across the insurance value chain, policy, claims, telematics, imagery and external data sources, data quality and bias assessment, feature engineering for insurance risk variables, the model development lifecycle, AI use case identification and prioritisation, risk classification and segmentation methods, logistic regression and gradient boosting for underwriting, risk factor analysis and variable selection, loss frequency and severity prediction, portfolio monitoring and risk concentration analysis, model calibration and lift chart evaluation, claims triage for severity and complexity, straight-through processing and automation rules, fraud detection for claims and application fraud, anomaly detection and network analysis, imbalanced data handling and false positive management, referral scoring, GLM versus machine learning pricing approaches, rating factor selection and interaction effects, computer vision for property damage and aerial imagery, natural language processing for claims documents, automated document classification and extraction, customer segmentation and retention modelling, SHAP and local interpretable model-agnostic explanations, fairness assessment and protected attribute handling, model validation and performance drift monitoring, governance frameworks and model inventory standards, regulatory expectations on AI in insurance, and documentation and audit readiness.

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Q5 How is the "Artificial Intelligence Applications in Property & Casualty Insurance" course applied in real-world practice?

Participants apply the methods to their own portfolios and claims data. They prepare insurance datasets, build risk classification and pricing models, calibrate outputs against loss experience, develop triage and fraud detection models, apply computer vision to damage imagery, extract data from claims documents, assess model fairness, validate and monitor performance, and document models for regulatory and audit review. Many leave with a model development checklist, an explainability framework, and a governance template ready to use.