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Developing Technology Foresight: Case Study
of AI in InsurTech

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Introduction to the Course

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Developing Technology Foresight:

Case Study of Artificial Intelligence (AI) in InsurTech

Description: This course helps students gain competencies in forecasting and application of technologies - such as AI - in the modeling, analysis, and management of risk, as a preparation to becoming future insurance industry leaders. The course covers introduction to InsurTech, Artificial Intelligence (AI), and Technology Foresight.

Length of Course: 3 x 1.5 hours (approximate)

Level of Instruction:

- Appropriate for both undergraduate and graduate-level programs with risk assessment and management components.
- Graduate-level case studies, projects, and readings are included

Learning Setting: This course is suitable with minimal modifications for in-person, online, or hybrid modes of delivery, compatible with most LMS.

Course Learning Outcomes: Upon completion of this course, students will be able to:

- Identifying emerging technologies and how they may address the needs of the Insurance Industry
- Explain key concepts of AI, the Insurance Industry, and summarize current and future roles of AI in InsurTech
- Analyze, simplify, and associate various applications of AI to current needs of the Insurance Industry

Module 1 Learning Outcomes:

Upon completion of Module 1, students will be able to explain key concepts of AI, the Insurance Industry, and summarize current and future roles of AI in InsurTech. In particular:

- Importance of Technology Foresight in the Insurance Industry
- The definition of AI and ML, their concepts and application area
- State-of-art in InsurTech and current problems

Module 2 Learning Outcomes:

Upon completion of Module 2, students will be able to analyze, simplify, and associate various applications of AI to the current needs of the Insurance Industry. In particular:

- AI in Customer Service. Usage-based insurance, proactive analytics, chat-bots.
- AI in Marketing. Classification, summarization, template generation, mix-and-match policy, insurance advice.
- AI in Underwriting. The risk score, instant insights, and aids for the underwriter.
- AI in Fraud Detection and Claim Processing. Fraud detection, information validation, damage assessment, claims processing.

Module 3 Learning Outcomes:

Upon completion of Module 3, students will be able to identify emerging technologies to address the needs of the Insurance Industry. In particular:

- Identify current needs of InsurTech in the modeling, analysis, and management of risk
- Map functionalities of various emerging technologies to these current needs of InsurTech

Homework: To be determined

Module Exercises: To be determined

Learning Materials: To be determined

Technical Specifications: To be determined

Grading: To be determined

Course Outline:

Module 1. Introduction to Technology Foresight, Risk Management, and InsurTech

1.1. Fundamentals of Technology Foresight

- Introduction to principles of Technology Foresight
- Common applications of Technology Foresight

1.2. Fundamentals of AI

- Introduction to Artificial Intelligence
- Introducing Machine Learning
- Natural Language Processing (NLP) overview

1.3. Introduction to InsurTech

- Current challenges in the insurance industry
- Origin and current state of InsurTech

Module 2. Case studies of AI and InsurTech

2.1. AI in Customer Service

- Usage-based insurance
- Proactive analytics

2.2. AI in Marketing

- Classification, summarization, template generation.
- Mix-and-match policy
- Insurance advice

2.3. AI in Underwriting

- AI and risk score
- AI and the underwriter

2.4. AI in Fraud Detection and Claim Processing

- Fraud detection
- Information validation
- Damage assessment
- Claims processing

Module 3. Technology Foresight and InsurTech

3.1. Technology gaps & trends in InsurTech

- IoT in Insurance industry
- Blockchain in Insurance industry
- Cloud Computing in Insurance industry

3.2. InsurTech Case Studies