A.I. for Insurance

Practical Use Cases, Strategies, and Implementation Insights

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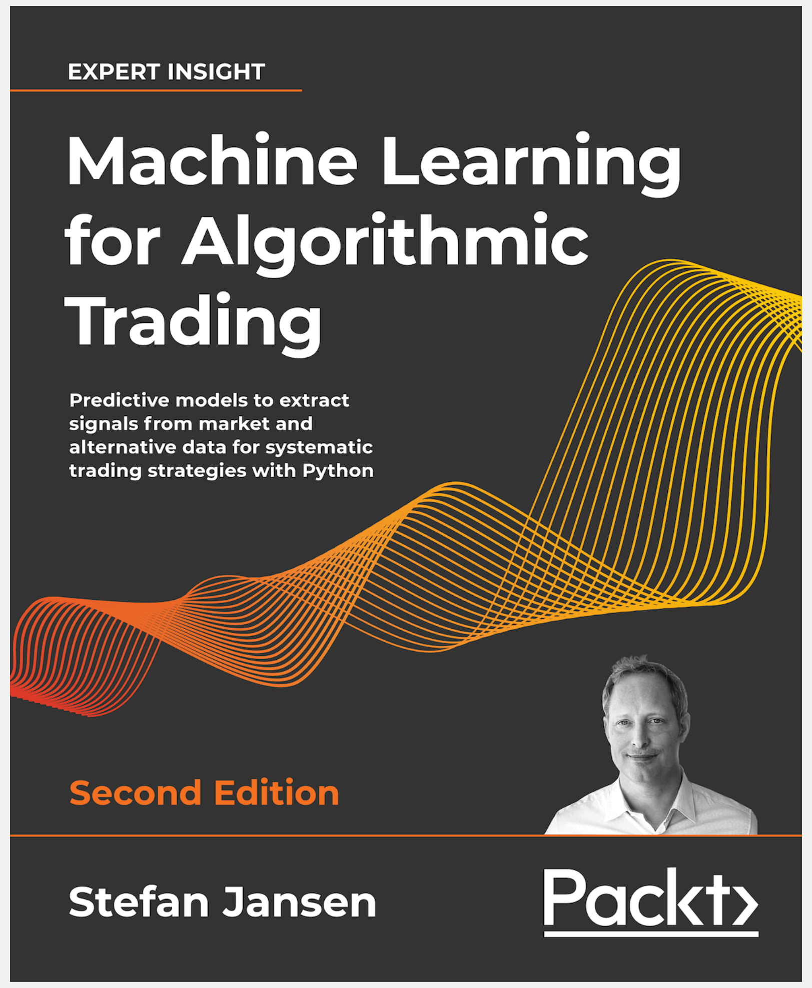
Strategy Consulting and Development of AI Solutions

- **Since 2015**, we advise senior leaders on AI & data strategy and develop AI solutions from Fortune 500 companies to startups in insurance, healthcare, and investment industries.
- We focus on data science and predictive analytics, document intelligence, interactive assistants, and AI agents.
- **Previous roles**: partner and managing director at an international investment firm and executive at a global fintech company with operations in 15 markets.
- **Background**: Master degrees in Computer Science from Georgia Tech and in Economics from Harvard and Free University Berlin; CFA Charterholder.



Applied AI

AI for Insurance

- AI (R)evolution – What's Different Now?
- Business Value Across Key Areas
  - Document Intelligence & OCR
  - Claims Processing & Triage
  - Underwriting & Risk Assessment
  - Investments & Market Research
- Implementation Advice
- Keys to Success: Avoiding Pilot Purgatory
- Action Plan – What to Do Next

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Agenda

AI for Insurance - Roadmap

AI Advancements

Explore recent breakthroughs in AI technology, including large language models and generative AI, and their implications for the insurance industry.

High-Impact Use Cases

Discuss specific applications of AI in insurance, focusing on document intelligence, claims processing, underwriting, and investment analysis.

Implementation Strategies

Outline effective strategies for integrating AI into insurance operations, including budgeting, resource allocation, and team structure.

Keys to Success

Highlight critical factors for successful AI adoption, such as avoiding pilot purgatory, ensuring data governance, and measuring ROI.

AI (R)evolution – What's Different Now?

The Revolution in Language & Generative Models

- **AI capabilities** have evolved from narrow, specialized tasks to general-purpose applications thanks to model architecture and engineering advances enabling (very) large language models
- **Computing costs** have plummeted while processing power has increased exponentially, making advanced capabilities financially accessible to organizations of all sizes
- The emergence of intuitive, **no-code AI platforms** has eliminated technical barriers, allowing business users to customize and utilize AI solutions without specialized expertise
- Enterprise-ready **API ecosystems** now enable seamless integration of AI into existing workflows and legacy systems with minimal disruption
- **Data analysis capabilities** have progressed from structured, tabular information to complex unstructured content (documents, images, audio), unlocking value from previously inaccessible information

AI Evolution (2019-2021)

Early AI Adoption and Pioneering Use Cases

- By 2019, only about 10% of **Portfolio Managers** had used AI/ML, but pioneers experience significant benefits (e.g. NY Life Insurance).
- **Smaller and mid-sized firms** were still relying on traditional tools, but awareness was rising.
- The training cost of an image classification system dropped 64% 2018-2020.
- Major financial firms began investing in AI capabilities (e.g. **S&P Global**'s $550 million acquisition of AI startup **Kensho** in 2018).
- In 2021, McKinsey found **56% of firms had adopted AI** in at least one area
- J.P. Morgan developed COIN (**Contract Intelligence**) to review legal documents in seconds as opposed to 360,000 hours of manual work annually

AI Takeoff (2022-2023)

The Breakthrough Period: Enter Large Language Models

- **Large Language Models** reached new heights—GPT-4 scored in the 90th percentile on the Uniform Bar Exam and the 99th percentile on the LSAT
- **Generative AI** emerged as a transformative technology, with ChatGPT reaching 100 million users within two months of launch
- **Business adoption surged**—70% of companies were exploring generative AI by mid-2023; Allianz devoted a significant share of its global 5.7bn technology investment to AI.
- **Walmart** deployed AI-powered inventory management across 4,700 stores, reducing out-of-stock items by 30%
- **Morgan Stanley** partners with OpenAI to create AskResearchGPT that helps financial advisors search 100,000+ research documents to answer client questions in seconds
- State Farm, United Health Allstate, Cigna and The Hartford account for the majority of **900+ AI patents** filed by insurance companies; a handful of insurers invest in AI startups

AI Today

Mainstream Integration & Business Impact

- Organizations implementing AI report an a**verage revenue increase** of 3-15% across various functions (Deloitte)
- 72% of companies now consider **AI a competitive necessity** rather than an optional advantage (IBM)
- Developers using **GitHub Copilot** complete tasks 55% faster, with the tool suggesting up to 43% of code in supported languages (Microsoft)
- **BlackRock** integrated AI capabilities into its Aladdin platform used by thousands of investment professionals across 85+ countries
- **Operational efficiencies** remain the primary AI value: 61% of firms cite cost reduction and process efficiency
- **Small and mid-sized businesses** benefit from democratized access—61% now use some form of AI compared to just 29% two years ago
- **Insurance CEOs** >2x as likely as the all-industry average to agree they were utilizing AI to speed up data analysis.; 81% consider Gen AI as a top investment priority for their organization.

Business Value across Key Functions

Operational Efficiency

AI automates repetitive tasks, reducing manual work and cycle times significantly. This leads to streamlined processes and cost savings for insurers - and possibly new sales opportunities.

Risk Selection

Enhanced underwriting accuracy through data-driven insights and predictive analytics enables better risk assessment and pricing strategies.

Customer Experience

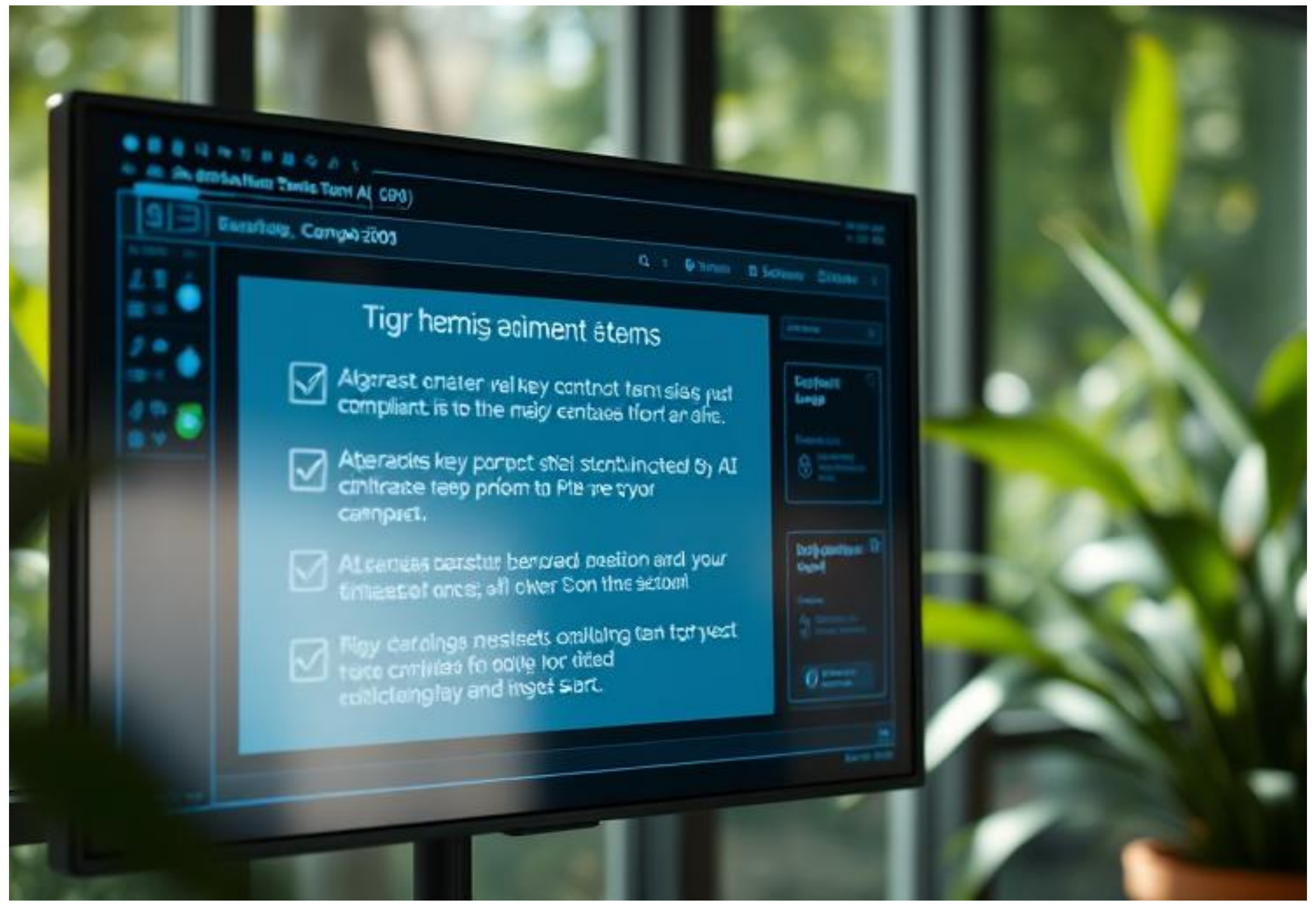
AI personalizes service offerings and accelerates response times, leading to improved customer satisfaction and retention.

Investment Insights

AI analyzes large datasets for better asset allocation and investment decisions, providing insurers with a competitive edge in the market.

Use Case

Document Intelligence & OCR



Streamlined Document Processing

AI-driven OCR technology digitizes and extracts data from policies, claims forms, or other documents, reducing manual input and other forms of processing.

Automated Contract Analysis

LLMs and NLP algorithms analyze contracts and compliance documents, ensuring faster and more accurate reviews or decision support.

Enhanced Efficiency and Accuracy

Experience 30–60% (or more) reduction in review times, leading to faster underwriting and claims processing, as well as more productive sales.

Use Case

Claims Processing & Triage

Challenges in Claims Processing

Insurers face increasing claim volumes with limited staff, leading to longer processing times and potential for errors.

AI Automation Solutions

AI can triage incoming claims by severity, identify fraudulent patterns, and generate draft communications to streamline the process.

Benefits of AI Integration

Automating 40–60% of straightforward claims processing accelerates payouts, enhances customer satisfaction, and reduces operational overhead.

Impact on Business Outcomes

Faster claims processing improves customer loyalty, lowers costs, and contributes to better financial metrics, enhancing overall investment capacity.

Use Cases

Underwriting & Risk Assessment

ML-Based Risk Scoring

AI analyzes multi-year claims data to assign accurate risk scores, identifying high-risk policies early.

LLM-Assisted Underwriting

Natural Language Processing summarizes broker submissions, improving decision-making efficiency.

Dynamic Pricing Updates

AI enables real-time adjustments to pricing based on emerging risk factors and market conditions.

Use Case

AI for Investments & Market Research

Information Overload

Investment professionals face a deluge of market news, SEC filings, and data from rating agencies, making timely analysis challenging.

AI Assistance

AI tools utilize large language models (LLMs) to summarize daily market updates, analyze investment scenarios, and monitor credit risk, enhancing decision-making.

Impacts on Investment Strategy

AI-driven insights lead to quicker, more informed asset allocations and early detection of market stresses, reducing risks in investment portfolios.

Real-World Applications

Companies leveraging AI for investment analysis report improved risk-adjusted returns, enabling better hedging and agile responses to market changes.

Implementation – Budget & ROI Timeline

Budget & Investment

- **Pilot costs** vary widely depending on the **complexity** of the project and can start at $10K; some surveys report averages around $100-300K.
- Many vendors offer **pay-as-you-go pricing** models well-suited to smaller companies, with costs scaling based on document volume or user counts
- Consider **hidden costs**: data preparation often accounts for 25-30% of total project expenses
- Resource allocation tip: budget 15-20% beyond initial vendor estimates for **integration and change management**

Timeline & ROI

- Time to achieve **positive ROI** can be as quick as 3 to 6 months for straightforward implementations like document processing or chatbots
- **Claims processing** AI typically shows positive ROI within 6-9 months, with average processing time reductions of 30% (McKinsey)
- **Underwriting assistance** tools often take 9-12 months to show full benefits but can improve underwriter capacity by 40% (Swiss Re)
- Most successful implementations break even within **12-18 months**, focusing on operational efficiency first

Implementation – Strategy & Risks

Strategic Approach

- A **phased approach** is recommended: Identify a high-value pilot, deploy, measure ROI, refine, and expand to additional use cases
- Focus first on **high-volume, rules-based** processes with **clear success metrics** (e.g., FNOL processing, policy endorsements)
- **Cross-functional implementation teams** perform best: combine IT, business users, and a dedicated "AI champion”
- For **smaller firms**, vendor selection is critical: prioritize industry-specific expertise and integration experience with your core systems

Common Pitfalls & Solutions

- Data quality issues cause 80% of AI project delays—conduct a **data readiness assessment** before full implementation
- Start with **90% off-the-shelf** and 10% customization, gradually increasing customization as you build expertise
- Lack of user adoption often stems from insufficient training—allocate at least 10-15% of project budget to **change management**
- **Avoid AI isolation**: ensure new AI tools integrate with existing workflows rather than creating separate processes

Implementation Strategies

Keys to Success & Avoiding Pilot Purgatory

01	Focus on Business Value	Identify AI projects that align with specific business challenges and can deliver measurable ROI, ensuring relevance to operational goals.
02	Reimagine End-to-End Processes	Evaluate and redesign existing workflows to integrate AI seamlessly, maximizing efficiency and effectiveness across departments.
03	Strong Data Governance	Establish robust data management practices that ensure compliance with regulations while maintaining data quality and integrity for AI applications.
04	Change Management	Communicate clearly about AI initiatives, success stories, and provide training to staff to foster a culture of acceptance and adaptability.
05	Measure & Refine	Continuously track performance metrics and ROI of AI implementations, making adjustments as necessary to optimize outcomes and scale solutions.

Action Plan – What to Do Next

Assess AI Readiness

Evaluate current data quality, identify internal champions who understand AI, and establish a realistic budget for AI initiatives.

Identify High-Value Use Cases

Focus on domains that could yield the biggest near-term ROI, such as claims processing or underwriting improvements.

Select Technology Approach

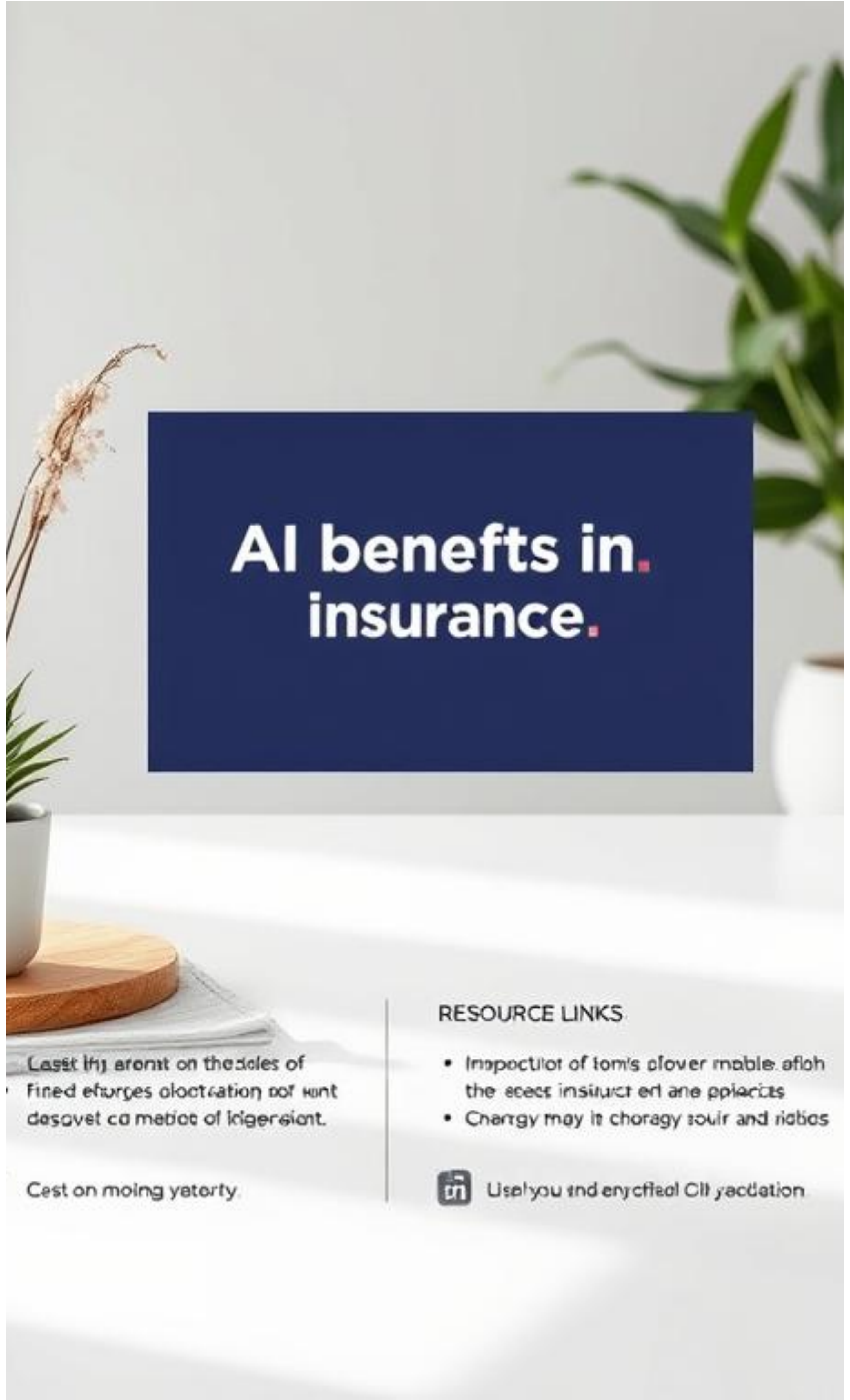
Decide whether to use off-the-shelf solutions for quick wins or pursue a hybrid model that combines vendor technology with proprietary data.

Start Small, Iterate Fast

Launch pilot projects to test AI solutions, measure ROI, and refine approaches based on real-world feedback.

Stay Compliant & Communicate

Ensure adherence to regulatory requirements and maintain clear communication with stakeholders, including regulators, employees, and customers.



Conclusion

Conclusion & Resources

- AI is transforming insurance operations, enhancing efficiency and decision-making.
- Implementing AI can lead to significant ROI through improved processes in underwriting, claims, and investments.
- Contact: Stefan Jansen, stefan@applied-ai.com.
- Thank you for your attention!