

Draft: 8/28/23

Big Data and Artificial Intelligence (H) Working Group  
Seattle, Washington  
August 13, 2023

The Big Data and Artificial Intelligence (H) Working Group of the Innovation, Cybersecurity, and Technology (H) Committee met in Seattle, WA, Aug. 13, 2023. The following Working Group members participated: Elizabeth Kelleher Dwyer, Chair (RI); Amy L. Beard, Co-Vice Chair, represented by Victoria Hastings and Alex Peck (IN); Doug Ommen, Co-Vice Chair (IA); Adrienne A. Harris, Co-Vice Chair, represented by John Finston (NY); Kevin Gaffney, Co-Vice Chair (VT); Mark Fowler (AL); Barbara D. Richardson (AZ); Michael Conway, Peg Brown, and Debra Judy (CO); Andrew N. Mais, George Bradner, and Wanchin Chou (CT); Susan Jennette (DE); Rebecca Smith (FL); Shannon Hohl (ID); Erica Weyhenmeyer (IL); Chuck Myers (LA); Rachel M. Davison (MA); Kathleen A. Birrane (MD); Timothy N. Schott (ME); Karen Dennis (MI); Phil Vigliaturo (MN); Cynthia Amann (MO); Colton Schulz (ND); Eric Dunning (NE); Christian Citarella (NH); Matt Walsh (OH); Teresa Green (OK); Alex Cheng (OR); Shannen Logue, Katie Merritt, and Michael McKenney (PA); Ryan Basnett (SC); Travis Jordan (SD); Stephanie Cope (TN); Mark Worman (TX); Scott A. White (VA); Bryon Welch (WA); Rachel Cissne Carabell (WI); and Erin K. Hunter (WV). Also participating were: John F. King (GA); and Matt Gendron (RI).

1. Adopted its Spring National Meeting Minutes

Commissioner Ommen made a motion, seconded by Commissioner Gaffney, to adopt the Working Group's March 22 minutes (*see NAIC Proceedings – Spring 2023, Innovation, Cybersecurity, and Technology (H) Committee, Attachment Two*). The motion passed unanimously.

2. Received an Update on the AI/ ML Surveys

Commissioner Gaffney said the Artificial Intelligence (AI)/Machine Learning (ML) surveys are being conducted to accomplish three goals: 1) gain a better understanding of the insurance industry's use and governance of big data and AI/ML; 2) seek information that could aid in the development of guidance or potential regulatory framework to support the insurance industry's use of big data and AI/ML; and 3) inform state insurance regulators as to the current and planned business practices of companies. Commissioner Gaffney said the public report of the Private Passenger Automobile (PPA) AI/ML survey was distributed at the 2022 Fall National Meeting and is posted on the NAIC website under the Big Data and Artificial Intelligence (H) Working Group.

Commissioner Gaffney said the public report of the Home AI/ML survey has been issued. The Home Insurance survey was conducted under the examination authority of 10 states (Connecticut, Illinois, Iowa, Louisiana, Nevada, North Dakota, Pennsylvania, Rhode Island, Vermont, and Wisconsin) and was issued to insurers having at least \$50 million in national homeowners written premium in 2020. Just like the PPA survey, the requesting states agreed the collected data will not be used to evaluate or determine a company's compliance with applicable laws and regulations and that all company-specific information will be kept confidential under state examination authority.

Commissioner Gaffney said the survey was focused on the use of AI models, which include ML, but it was specifically limited to exclude the use of more traditional generalized linear models (GLMs) in the areas of claims, fraud identification, marketing, rating, underwriting, and loss prevention. He said the survey also asked about data elements used by operational area, how consumers are notified of the use of data and their ability to request a correction to data being used, how governance is documented in the company's governance framework, and the names of third-party vendors providing data and/or external models.

Out of the 194 companies completing the survey, Commissioner Gaffney said 136 companies (or about 70%) use, plan to use, or plan to explore using AI in their operations. This is not quite as high as the 88% of the responses received from the PPA survey, which may be due to less usage of AI/ML claims models in homeowners insurance. Among insurer operations areas, Commissioner Gaffney said the percentage of companies using AI models in homeowners insurance were: 1) claims, 54%; 2) underwriting and marketing, both at 47%; 3) fraud detection, 42%; 4) rating, 35%; and 5) loss prevention, 14%. He said the main reasons reported for not using, not planning to use, and not exploring the use of AI for home insurance were: "no compelling business reason"; "waiting for regulatory guidance"; and "lack of resources and expertise." In the claims function, the home insurers reported using AI mostly for subrogation, claims triage, and evaluating images of loss.

Commissioner Gaffney said home and PPA insurers use claims models to analyze images of loss. Home insurers also use claims models to determine subrogation and for claims triage. He said home insurers do not use claims models to make claim assignment decisions or to determine settlement amounts as much as reported in the PPA survey. AI/ML claims models for both home and PPA were generally developed in-house except those used to evaluate images, which tend to be developed externally.

For fraud identification, Commissioner Gaffney said both PPA and home insurers reported using AI mainly to refer claims for further investigation, with some using AI to detect organized crime rings. Some home insurers also reported using social media for fraud identification. For both home and PPA, fraud models were mixed between internally and externally developed models.

For marketing, Commissioner Gaffney said both home and PPA insurers are generally using AI for targeted online advertising. Generally, the marketing models used in both PPA and home were reported about equally developed in-house and purchased from a third party.

For rating and underwriting, Commissioner Gaffney said there was less usage of advanced AI/ML models reported, mainly reflecting the transparency requirements by state insurance regulators, where more traditional GLMs provide this transparency. Almost all rating and underwriting models were developed in-house. Home insurers reported that most models used in underwriting were for automated or augmented denial decisions and for verification of policy characteristics.

For loss prevention, Commissioner Gaffney said 28 home insurers reported using AI mainly for guidance on loss control inspections, but only three PPA insurers reported using AI for loss prevention.

Commissioner Gafney said a variety of typical data elements are being used in home and PPA insurance depending on the model purpose and that insurers are also looking at a lot of geo-demographic data externally sourced. For marketing, insurers are looking at a lot more types of data to identify prospects than would be allowed for use in ratemaking or underwriting, such as data on occupation, education, personal finance information, and income.

When asked about information provided to policyholders about how their data is being used and opportunities to correct their data, Commissioner Gaffney said there was a low response rate from insurers reporting they do more than what is required by existing statutes and regulations.

Regarding insurers' documented governance practices as aligning with the NAIC Principles on AI, Commissioner Gaffney said roughly half of insurers reported they have a documented governance program that considers the elements of the NAIC Principles on AI.

Commissioner Gaffney said potential next steps include exploring insurers' AI model usage and the level of decision-making, evaluating the regulatory framework for the use of third-party models, and determining whether additional white papers on best practices on subjects related to AI/ML would be useful. There were no additional comments or questions from the Working Group members or interested parties.

### 3. Heard a Presentation from Deloitte on Generative AI

Superintendent Dwyer said the next agenda item is to hear a presentation on generative AI from David Sherwood (Deloitte) and Casey Kacirek (Deloitte). Before hearing the presentation from Sherwood and Kacirek, Superintendent Dwyer said NAIC staff asked ChatGPT, which is an example of generative AI, to explain what Generative AI is. The following, edited for brevity, is what ChatGPT produced:

*Generative AI refers to a category of artificial intelligence techniques that focus on creating or generating new content, data, or information. These techniques are particularly useful in tasks where creativity, imagination, and pattern recognition are required. When explaining generative AI to state insurance regulators, you can use the following approach: Generative AI involves training a computer program to generate content that is similar to, but not identical to, existing data. It's like teaching a computer to come up with its own versions of things it has seen before. Generative AI models are trained on large datasets to understand the patterns, styles, and structures present in the data. These models then use this knowledge to create new content that fits within the learned patterns. For example, a generative AI model trained on insurance claim data can generate new, plausible insurance claims based on the patterns it has learned.*

Sherwood said AI has been around a long time, and credit card companies use it to detect fraud. Sherwood said generative AI is a hot topic of discussion. Sherwood said Deloitte has a concept called trustworthy AI, and organizations need to think about what controls are in place for AI conducting tasks.

Kacirek said AI is technology striving to mimic human behavior. This encompasses several technologies that work together, including ML, natural language processing, predictive analytics, and speech processing. In terms of the evolution of AI, Kacirek said generative AI is creating content based on human prompts by leveraging robust data sources that are either internally or externally available. Natural language processing (NLP) is another emerging technology, which is the ability to understand text and spoken words. Kacirek said Alexa and Siri are based on the ability to understand human language. Computer vision is another technology that has been in existence and is essentially image recognition, such as facial recognition to unlock a phone. She said Netflix and Hulu use near real-time interfacing to provide consumers recommendations based on the analysis of real-time data on how a consumer is selecting a show. Kacirek said these four technologies are driving the emerging capabilities of AI.

Kacirek said a business could have an initial draft of code written through generative AI and have that draft be the basis for a human coder to review and leverage. Generative AI can also be used for marketing and creative design work. Generative AI can produce a wide range of outputs depending on the specific application and type of data that is needed. Some common output types include text, video, code, image, and audio. Sherwood said generative AI is being used in insurance to create text. For example, draft job descriptions or consumer communications on certain types of claims might be prepared using generative AI. Insurers can then use a human in the loop to review these outputs. For call centers, insurers might use audio generative AI where a human is answering calls with generative AI listening and providing suggested prompts to the types of questions being asked.

Kacirek said the use of external data and third-party data requires monitoring and controls to be in place and that a human should be responsible for the output. Sherwood said it is unlikely that insurers will be developing their own generative AI systems because there are already leaders in this field. Sherwood said it is important to understand how insurers integrate this technology with their existing technology and how both internal and external data might be leveraged.

Kacirek said there are potential risks with using generative AI, including bias since models are leveraging robust data sets. She said data may have unintentional bias, such as demographic data or protected class data. Because of this, there is a need to monitor for potential bias, and having some level of human supervision during the training of a model is one way to address bias risk. Periodic monitoring is also needed to assure the model continues to perform as anticipated. Kacirek said companies should consider whether the use of a model output is ethical to use. She said another risk is hallucination, which occurs when a model produces an output that sounds plausible but is factually incorrect. Kacirek said this may occur because of poor data quality. Sherwood said generative AI is mimicking human behavior and that risk and control are important because AI works at a higher velocity than humans.

Kacirek reviewed Deloitte's Trustworthy AI framework is intended to provide a framework to address the risks associated with the use of AI. She said the framework is rooted in the National Institute of Standards and Technology (NIST) AI framework. Kacirek said the Deloitte framework includes the following concepts:

- **Fair and impartial:** This involves assessing whether systems include internal and external checks to assure equitable application across all participants and that there is no bias towards certain groups or protected classes. Companies can assess this risk by conducting fairness testing and reviewing whether models are providing any discriminatory outcomes.
- **Transparent and explainable:** Participants can understand how their data is being used and how AI systems make decisions. This means questioning whether algorithms and attributes are open to inspection and whether the outcomes are explainable.
- **Responsible and accountable:** This involves making sure policies are in place to determine who is held ultimately responsible for the output of AI system decisions.
- **Robust and reliable:** This focuses on having the appropriate, minimum requirements or checks for reliability and consistency of an AI model prior to deployment. This also involves ongoing checks after deployment to make sure the model performs as intended.
- **Privacy:** This involves elevating consumer privacy to make sure customer data is not used beyond its intended and stated use.
- **Safe and secure:** This involves elevating safety and security to assure AI systems are protected from risks, including cyber risk.

Kacirek said approximately 50% of organizations have adopted some framework for governing the use of AI. She said companies have an opportunity to leverage existing risk management processes, which have roles and responsibilities, policies and procedures, processes and technology, and aspects of cross-functional compliance. Sherwood said a good example of leveraging existing model risk management is for a company to review the list of models being used and to identify which models are using AI. This might lead to further scrutiny about what data is being used and the third parties being used.

Kacriek said building a trustworthy AI environment involves the concept of establishing three lines of defense. The first line of defense is for the business users to own the model and its outputs. The second line of defense is for a company to establish governance and compliance requirements. The third line of defense is for a company to have an independent review of models. Kacirek said business owners should be performing testing and validation of a model before it is deployed, and there should then be validation, monitoring, and controls in place. She said it is important for companies to understand how quickly they can respond to unintended outcomes of an AI model.

Sherwood said companies should look at the use of AI throughout the value chain and upskill staff in the use of AI. He said there are tasks that may be automated to enhance consumer outcomes or eliminate costs for the company. Sherwood provided an example of the use of accelerated underwriting, chat features of call centers, and the use of AI in claims settlement and fraud detection.

Superintendent Dwyer said it is important for insurance companies to be able to explain how their AI models work. Commissioner Ommen said transparency is an important consumer protection. For example, insurance companies may not be able to adequately explain to a consumer why a claim is being delayed or denied. Sherwood said a model should be generating an outcome, which is reviewed by a human, who then communicates the outcome to the consumer.

Commissioner Birrane said insurers should be able to explain what is causing an adverse decision or outcome for a consumer. Kacirek said a model will evolve over time and that a company should be accessing decisions that are considered outliers. The company can then assess the frequency of these outcomes and use these outcomes for possible training of the model within established guardrails.

Commissioner Gaffney asked how to minimize the risk of overreliance on data. Kacirek said there should be controls to monitor the completeness and accuracy of data prior to its use and ongoing monitoring. Companies should also make sure the data is fit for the intended purpose of the model. In response to Commissioner Gaffney's question about upskilling of state insurance regulators, Sherwood said upskilling should be completed in layers with foundational education provided to a broader set of staff and then more specific training provided to staff based upon their specific role. Sherwood said state insurance regulators should understand control environments and engage with industry to understand challenges. In response to Commissioner Gaffney's question about how AI could be used to reach underserved markets, Sherwood said automation of functions may help lower costs and could potentially lead to more affordable and available insurance.

Having no further business, the Big Data and Artificial Intelligence (H) Working Group adjourned.

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