

Descriptions document

Applications of Deep Learning Transformers (the technology behind ChatGPT) in insurance

The speed and accuracy of large language models such as ChatGPT has taken the world by storm recently and new use cases arise every day. In this talk we will provide an overview of applications of deep learning transformers (the technology behind ChatGPT) in insurance:

Mortality predictions

Anomaly detection in time series

Trading strategies, prediction of economic trends

Extracting information from documents

Question answering models using a knowledge base

We will show that transformers can outperform traditional statistical or machine learning models and how they can be deployed quickly.

Climate Risk: A regulatory perspective from CBI

This session will provide an update on climate risk from the Central Bank, including feedback from supervisory work on climate risk, observations on natural catastrophe modelling and ORSA work. It will also provide an update on EU and International regulatory initiatives, as well as revisiting the materiality assessment aspects of the Central Bank guidance.

Economic Update from ESRI

A macroeconomic outlook for the Irish economy at a time of uncertainty

Tokenisation of Financial Assets

In March 2023, Citibank estimated up to \$5 trillion of non-financial corporate and quasi-sovereign debt; repo, securities financing, and collateral market; and alternative assets, such as real estate, private equity, and venture capital, could be tokenised by 2030. Industry estimates for total tokenisation volumes are even higher. The proposed presentation will cover the following aspects of tokenisation:

What is fund tokenisation?

How does one tokenise an investment fund?

What are the benefits of tokenisation?

- Benefits for investors.

- Benefits for asset managers.

- Benefits for service providers.

What does tokenisation mean for different areas of actuarial practice?

What are some of the biggest challenges in tokenising assets?

- 12 issues to consider before submitting offering documents to regulators and issuing tokens to new subscribing investors.

Are tokenised units in AIF and UCITS funds regarded as crypto assets for regulatory purposes?

How might fund tokenisation change the liquidity profile and minimum investment size of real estate, private equity, private debt, and infrastructure?

Is tokenisation suited to cross border distribution?

Have any asset management firms tokenised funds or other assets?

What are the management challenges in tokenising funds?

Socioeconomic Diversity within The Actuarial Profession

PowerPoint presentation and discussion covering, inter alia:
Insights from ESRI and other organisations on socioeconomic and geographic barriers to Higher Education
Barriers to the actuarial profession and other professions
Approaches that have been tried to increase opportunity.
Next Steps

Big Data and AI: Opportunities and responsible implementation

Digital tools and innovations and how it might impact the industry
Professionalism/Ethics
Regulatory Developments

This session will explore the recent developments in Big Data and AI including generative AI including opportunities and use cases, updates on AI regulation and ethical considerations and finish with a practitioner view of implementation considerations including risk and ethical considerations. More specifically the session will cover an introduction to AI and Generative AI - Outline what Artificial Intelligence is and what is the art of the possible.

Use cases of AI and Generative AI across the insurance value chain - give examples of how AI and generative AI can be applied to Marketing, Underwriting, Claims etc. to drive commercial and customer value. Examples from a data science practitioner (Colin) as well as an insurance company view (from Aidan). Intention to include some practical live demos of AI in action within an insurance context.

Update on the regulatory landscape (Jean)

Finish with a practical practitioner view from Aidan on how organisations are currently leveraging and implementing AI and addressing some of the challenges in deploying the technology (Aidan)

Individual Accountability Framework (IAF) - what does it mean for actuaries?

A panel discussion on the incoming Individual Accountability Framework (IAF) and Senior Executive Accountability Regime (SEAR). Nuala Crimmins, Chair of our IAF Working Group, will chat with Mike Wilson, who will provide thoughts from the CBI, and Kevin Coleman, who will provide practical points on implementation.

IFRS 17 – a guide to postimplementation

Many (re)insurers have moved into the business as usual (“BAU”) phase of their IFRS 17 projects. In this presentation, we will discuss how companies are transitioning from IFRS 17 as a project to BAU. We will cover topics such as automating and optimising processes, using IFRS 17 as an opportunity to transform the Targeting Operating Model, preparing for IFRS 17 budgeting exercises and creating an efficient communication stream between all stakeholders.

Pensions Council Update

An update on the activities of the Pensions Council

High-Resolution Climate Projections for Ireland

An updated ensemble of downscaled CMIP6 under the four main SSP scenarios to the end-of-century.

Scenario testing masterclass

Scenario testing has become one of the most powerful risk management tools insurers have, in a world where new “1 in 200” risks seem to emerge every year. What better way to sharpen up your own skills than by doing real live scenario testing on some of the key global risks affecting the general insurance markets?

The session will harness the collective wisdom of the SAI Convention “hive mind” using interactive polling. Example scenarios may include the impacts of generative AI, the China/Taiwan conflict scenario, major global trade dislocation, the next (very different) global pandemic and more. You will even get to help choose which scenarios we cover.

You will take away the results of the live scenario tests to use in your own work, as well as fresh perspectives from experts and market peers.

Containing the cost of Irish Health Insurance

Healthcare cost inflation reduction: successful approaches and key learnings from similar markets.

Healthcare inflation is consistently above CPI creating funding burdens on the state, insurers, and consumers.

We provide a deep dive into similarly regulated markets, highlighting similarities and slight differences. We provide deep dives with specific focus on tried and tested approaches to reduce healthcare cost inflation where these would be suitable in the Irish market and highlight key learnings from these markets.

Tried and tested approaches to be discussed include:

Alternative reimbursement models (per diem, fixed fee, global fee, capitation, and fee for service models)

Tariff negotiations between insurers and service providers and soft channelling approaches

Health economics models utilised to inform funding decisions for payers

Resourcing mix in context of treatment modalities

Productionising R and Python models

This presentation will provide advice to actuaries on operational and governance issues on productionising, and automating R and Python models. It will also include suggestions for model development so that later automation becomes easier.

Investment issues around the accumulation and decumulation of assets for defined contribution schemes

Paying Pensions: an age-old challenge?

In what has been described as the “nastiest, hardest problem in finance”, some €120bn of Irish pension liabilities are due to be discharged, of which around €50bn (and growing) from DC funds, yet confidence that people’s pension will last long enough remains low. This session will explore investment issues around securing an income in retirement, including some case studies from the UK and some unsolved problems that could be addressed as an industry.

Challenges facing women in financial services

Insurance products are supposed to be designed to meet the needs of the customer, but lifestyle/lifecycles and family structures have changed over time. People are marrying, buying a home, or having children later in life and many more people live outside of the “nuclear” family structure. In particular, more women are pursuing careers and financial independence. As we look to the future of our industry and our profession, are we still meeting the needs of our customers? This session will look at the challenges faced by women engaging with financial

services both as customers and as leaders in the financial profession. We will share the results of our survey (Female Financial Equality) on women's experiences with financial services and draw on a broad panel to explore the roadblocks to engagement. Charlotte O'Sullivan will present, followed by a panel discussion.

An introduction to new CSRD sustainability reporting

Learn about significant new developments in the sustainability reporting landscape. This session will present an overview of CSRD requirements and how it is possible to derive an action plan. Presented by Deirdre Timmons, Director ESG and Sustainability Reporting and Finance, PwC and Joe Kennedy, Director Actuarial Services, PwC. The session does not require detailed prior knowledge of the subject and will have time for Q&A.

Recovery Planning – Is this for Real?

Recovery plans are intended to set out a credible course of action that can be implemented in a crisis to restore the financial position of an insurer. But how realistic and effective are they? A dry run exercise can help to identify areas of improvement and refinement of a recovery plan. This presentation sets out how an insurer might go about identifying the testable components of a plan, how the components would be prioritised based on a risk based assessment, and how a dry run exercise might happen in practice.

Defined Benefit Pension Schemes: Endgame Planning

With the improvements in funding levels arising from higher interest rates and the abating of the inflationary pressures of 2022, the conditions for DB schemes to pursue buy-ins and buy-outs have improved greatly. In the UK, against a similar backdrop, buy-outs and buy-ins are booming and 2023 is predicted to be a record year for the risk transfer market. Despite the central role of market annuities in Irish DB scheme funding and wind-up considerations, trustees nonetheless have legitimate concerns about the cost and opportunity cost associated with this route, along with reservations about the long-term security of insurance arrangements and the future of insurance regulation. Many schemes are now at a crossroads, and are actively assessing the merits of two very different futures – buy-out or long-term run-off – neither of which are without their drawbacks. In this session, we discuss whether now is an opportune time to take a step back and ask, 'Is buyout the right thing to do and can it be the gold standard for every scheme?' The pros and cons of the buyout route are put to scrutiny in an Irish context, along with a candid appraisal of the alternatives

AAE Committee update

A summary of the AAE activity across all our practice areas and how the work of the AAE links to the Society.

Making the Numbers Count: Communicating results with Impact

80 minutes to multiply the impact of your communications.

Overcoming growing challenges in non-life Actuarial Functions and the compelling case for automation

Regulatory reporting, BAU reserving, reserve booking, roll forwards, Actual vs Expected, dealing with external uncertainty such as what we saw with Covid-19, high damage inflation, and the overall challenge in the market of resource turnover – there is undoubtedly a lot on the reserving actuary's plate today, more so than there was a few years ago.

We will initially discuss the overall local and global landscape:

Outline the key challenges seen by actuaries in non-life insurers/reinsurers in recent times and their impact.

Emerging risks and uncertainties in non-life insurance/reinsurance business.

Considering the above challenges there is a growing need to automate the reserving process and create tools that offer robustness, resilience and ultimately, a more targeted and effective use of actuarial skillsets that can stand the test of time.

In this hands-on session, we will also explore ideas for automation within the reserving cycle that non-life reserving actuaries can use to help focus their attention on the most material issues and carry out the deep dives necessary to draw insightful conclusions about the business.

This will include a showcase of an application in R developed to quickly move through the reserving cycle and will utilise mock non-life Motor data. We will cover opportunities for automation right from the start of the reserving cycle (data) to the end (creating presentations).

While actual R knowledge is not necessary to understand the presentation, prior non-life reserving knowledge would be recommended.

Fixed Income and Credit Market Update and Outlook

An update on global fixed income and credit markets from the point of view of a Euro based credit investor, who invests dynamically these markets.

2023 insurance regulatory updates from EIOPA and CBI including latest status of Solvency II 2020

2023 insurance regulatory updates from EIOPA and CBI including latest status of Solvency II 2020 and the AAE activity around these issues.

AI-volution: Future-Proofing the Actuarial Role

Life Insurers continue to face increasingly challenging market and regulatory forces as well as new technological complexities. We will explore the disruptive technological solutions available in the market and the impact they have on life insurers. While it is important to embrace technological change in order to gain or retain a competitive advantage in the industry, the roles and responsibilities of actuaries need to evolve to embrace the new technologies to business processes. This session will also explore practical examples of the use of generative AI techniques in an actuarial and life insurance context and explore real-world applications.

This talk will:

Outline the impact of embracing financial transformation and implementation of Risktech /Insurtech on in the life insurance industry.

Provide an overview of new opportunities/challenges for life insurers due to emergence of RiskTech/Insurtech, including specific applications in actuarial work and the relevant impact on business outcomes;

Outline the best practices to be implemented by Actuaries using Risktech /Insurtech;

Practical Applications and Success Stories - Showcasing real-world examples where generative AI has been effectively implemented, and highlighting the positive outcomes and improvements achieved through its use.

- Data Optimization and Enhanced Risk Modelling - Discussing how generative AI can optimize data utilization and improve risk modelling capabilities

- Seamless Integration and Operational Efficiency - Highlighting the potential for improved operational efficiency and streamlined workflows.

Future Potential and Growth Opportunities - Exploring the future prospects of Risktech /Insurtech and generative AI by discussing emerging trends, research directions, and the potential for further innovation and collaboration.

Capturing the power of ensemble learning using GLM and Artificial Neural Network for Non-Life Insurance Underwriting

Keywords: Generalized Linear Models (GLMs) , Neural Networks, Ensemble Deep-learning AI , Combined Actuarial Neural Network (CANN)

Abstract: Generalised Linear Models (GLMs) are traditionally used by Actuaries in the estimation of claims frequency and severity due to the ease of explainability of results and seamless integration of Actuarial Judgement. Neural Networks on the other hand have been proven to have greater predictive power compared to GLMs but lack the integration of Actuarial Judgement directly. This restricts their utility in the world of Actuarial Pricing and Underwriting. In this presentation, we propose several hybrid models by integrating the traditional GLMs with the Neural Networks effectively. These hybrid models will have the power of prediction from the Neural Networks and the explainability and Actuarial Judgement from the GLMs thus having the best of both worlds.

The presentation includes

Overview of the existing research work and literature – Combined Actuarial Neural Networks (CANNs).

Introduction to Ensemble Deep Learning of Neural Network Models.

Analysing 3 new hybrid architectures of GLMs and Neural Networks.

Testing the performance of the models in estimating claims frequency using R.

Calculating the improvement index of the hybrid architecture over the individual GLMs and Neural Network models.

Practical Applications in Non-Life underwriting of the proposed hybrid models.

All the models are tested on the freMTP2freq motor insurance dataset for claims frequency estimation. This dataset is used in several research works and literature for testing the efficiency of the models.

This work was a part of the Doctoral Research Thesis of the speaker Dr S.R.Pranav Sai. The title of the thesis was 'Enhancing the Operational Efficiency of the Non-Life Insurance Industry in India by Using Actuarial and Data Science Techniques', awarded by Sri Sathya Sai Institute of Higher Learning, India (Deemed to be University) in the year 2021. Pranav is currently part of the Actuarial Modelling Centre team at Deloitte Ireland.

A time of change – how is this impacting on the world of mergers and acquisitions?

This session will explore the impact on mergers and acquisitions (“M&As”) during this period of regulatory changes and economic uncertainty. The proposed structure of the presentation is as follows:

Provide background as to what drives M&As in the life insurance sector.

Provide an update on recent M&A activity across EMEA.

Explain the most common valuation approaches used within the life insurance sector such as Traditional Embedded - Value and Operating Capital Generation, exploring various adjustments that may be applied relative to reported - Solvency II Own Funds.

Discuss how regulatory changes such as the implementation of IFRS 17 may impact on future deals.

Discuss the potential implications of the current economic uncertainty on M&As e.g. choice of assumptions such as inflation and risk discount rates.

In terms of assumed knowledge level, a basic level of understanding of actuarial valuation approaches and terminology will be assumed. Prior knowledge of the insurance mergers and acquisitions environment is not required. While not targeted at any groups in particular, we believe this session would be very interesting for key strategic decision makers within firms.

Cultivating Trust as a Professional

This session introduces some key ideas relating to trust and trustworthiness and explores case studies around this. Areas explored include:

Why and when is trust valuable?

What is the importance of trust to professions and professionals?

How does trust relate to reputation?

How does trust relate to transparency and accountability?

The reason why? An Economist's perspective

Trying to figure out why something happens is challenging particularly given all the many possible reasons that may or may not be the true underlying cause. Economists bring their own particular skills to these issues with many studies in education, labour and health from micro economists and the ups and downs of each country's economic performance from macroeconomists. This presentation will outline some of the ideas which economists have identified as the underlying causes of the big issues of the day:

what is the effect of education on health and longevity

how to solve the big disparity in higher education attendance between the top and the bottom

what is the effect of children on the pay levels of men and women

why did Ireland suddenly blossom as an economy in the Celtic Tiger

and then 10 years later suddenly crash due to the housing crisis.