ACTUARIES AND DATA SCIENTISTS

CHARTING YOUR FUTURE IN INSURANCE

With machine learning and artificial intelligence growing in capability and application it is certain that the Insurance Industry will experience radical changes in the years to come. For actuaries and data scientists the coming changes will undoubtedly offer new possibilities and challenges to their career path.

According to the World Economic Forum we are in the 4th Industrial Revolution (https://www.weforum.org/focus/fourth-industrial-revolution). This revolution is characterized by the convergence of Digital, Biological, and the Physical worlds. Central to this revolution is the generation and utilization of data. The demand for data experts in insurance will surely continue to grow. The challenges that lie ahead encapsulate ensuring data quality, facilitating data structures, navigating regulatory issues with data, and deep analysis of huge amounts of data for business intelligence. Machine Learning and Artificial intelligence will automate many of the more tedious and repetitive tasks related to data. The key for data scientists and actuaries to stay relevant in the years to come will be their continued growth in leveraging the data to discover actionable risk management and business objectives. Key characteristics of successful employees in the future will be the ability to continually grow and adapt to new technology related to data. Also important will be their creative application of analysis to positively reduce costs, prevent loss, speed up analysis and provide a high level of individualized service for the customer.

By: Dan Karrow

BELOW IS A CHART ILLUSTRATING THE DIFFERENCES BETWEEN THE TWO DATA SPECIALISTS AND A SUMMARY OF HOW THINGS MIGHT CHANGE IN THE FUTURE.

	ACTUARIES	DATA SCIENTISTS
CURRENT CORE FUNCTION	Product Development- design and price of insurance, Financial Reporting – Evaluate probability of loss and estimate the cost. Utilize primarily statistical models.	Create models to leverage the use of the company's data bank which is not necessarily tied to any specific function. Utilize algorithms and machine learning.
POST UNDERGRADUATE EDUCATION	Rigorous Actuarial Exams administered by Actuarial Societies and experience gained from student programs.	Masters/PHD Self learning
CHARACTERISTICS & TECHNICAL SKILLS	Insurance focused expertise—experts in insurance risk Technical Skills: Pre-developed Actuarial Programs like Moses, Axis, and Prophet. Also programs like Excel, SAS and SQL	General data expertise applicable across many industries- can utilize data in both structured and unstructured forms. Technical Skills: R, Python, Tableau, Hadoop
POTENTIAL CHANGES TO WORK	Pricing and In-Force analytics will be more closely tied to data Actuaries will need to become more comfortable with large data sets and machine learning techniques. As automation takes on more functions they will need to expand data skills and business understanding to prevent becoming focused solely on regulatory and compliance issues.	Machine Learning and Artificial Intelligence will continue to play bigger roles in the use of data. Some of this work will be taken on by less skilled workers as more packages and technologies facilitating the use of data proliferate. Data Scientists will need to continue to expand their capacity to find and use data but will also need to expand their ability to draw domain specific actionable advice from the findings.