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Actuary of the Future

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Volunteer Experience With the SOA Actuarial Innovation and Technology Repository

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Actuarial science—a highly competitive field—requires both academic education, tested by Society of Actuaries (SOA) exams, and practical experience. As an international undergraduate student, I've always felt distant from the real world and wondered how real actuaries deal with all these functions and probabilities; we use only calculators during the classes and exams. That's why I have tried this year to find all kinds of volunteer experiences. My university offered me the great opportunity to learn actuarial science, but I needed to find my own pathway to accumulate more professional experience.

I applied to volunteer on the SOA Actuarial Innovation and Technology Repository Team. Fortunately, I was accepted about one month later. My teammate and I had our first phone meeting at the end of February. The main task of this team was to look for any information (e.g., articles, videos, reports) that introduces the latest technology improvements in the actuarial field in 14 different sections: artificial intelligence, autonomous vehicles, big data solutions, blockchain, cloud computing, cyber risk, data analytic tools, InsurTech, machine learning, predictive analysis, telematics, usage-based insurance, virtual reality, and wearable devices. Each person was assigned one or more sections based on the individual's own interests to condense into a short abstract. I chose artificial intelligence (AI).

I was delighted by this choice since AI has become a very popular technology in recent years. The relationship between actuarial science and AI was intriguing to me even before I dug into the topic. Students like me sometimes feel stressed when performing calculations in our homework, which is not as difficult as what those senior actuaries experience in their real-life jobs. Could AI bring more convenience and accuracy into this field? If so, when? Which processes of an actuary's daily work could be more influenced by this technology? With so many questions in my head, I started my search on the internet.

According to PwC,[1] AI has already been applied in many fields to minimize the distance between human and machine—for example, RIVA Machine, a robot that fills prescriptions; and DoNotPay, a bot that appeals parking tickets for free; and Ayannah, whose AI-powered credit scoring service aids unbanked Filipinos who otherwise would not have a credit score. AI functions as an equalizer to lessen the gap among the different societies. What surprised me was not AI's identity as a new technology but its social function. Links between technology and social equality were something I'd never considered before.

From reports about AI introduction, it seems that more and more fields have been influenced by AI. What about the actuarial science field? I believe that AI does not currently affect our profession that much, but most of the papers I read indicated that it is highly likely to in the future. Mainly, with the assistance of AI, the purpose of insurance will shift from "detect and re-

pair" to "predict and prevent."[2] The capacity of solving policies will be greatly increased in the near future by AI methods like automated machine learning and robotic process automation, which deliver consistent, accurate and informed decisions in underwriting, pricing and claims.[3] Therefore, the insurance model can be enhanced and the cost of correlated process can be saved.

While reading these articles, I was reminded of the new SOA Predictive Analytics Exam. In the introduction, this exam serves as a continuation of the Statistics for Risk Modeling Exam. More computational tools will be emphasized in this exam. The transition to prediction and prevention has also snuck into the requirements for future actuaries.

As one of this pack, I wonder what the future holds for this profession. Will this field still be popular or, more pessimistically, even exist in 10, 20 or 30 years? Have I made the right call for my career? The evolution of current trends and technology affects every profession. During my volunteer experience, I was pleased to find my concern was also considered by so many senior actuaries. What's more, I am more aware of future challenges. From my section, the cooperation between machine and human will definitely be—or has already currently become—one of the requirements for us, too.

The brief presentation for this program has been updated on the SOA website.[4] I do hope that more future actuaries will be involved in this program. It exposes a more practical world, not one limited by academic lectures and exam manuals. The actuarial industry has always evolved. Should we follow the pathway of these AI evolutions to be more prepared for the future? ■

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ENDNOTES

1 Rao, Anand, and Matthew Lieberman. Bot.me: How Artificial Intelligence is Pushing Man and Machine Closer Together. *PwC.com*, April 2017, *https://www.pwc.com/us/en/services/consulting/library/consumer-intelligence-series/artificial-intelligence.html* (accessed September 15, 2019).

2 Balasubramanian, Ramnath, Ari Libarikian, and Doug McElhaney. Insurance 2030—The Impact of AI on the Future of Insurance. *McKinsey.com*, April 2018, *https://www.mckinsey.com/industries/financial-services/our-insights/insurance-2030-the-impact-of-ai-on-the-future-of-insurance* (accessed September 15, 2019).

3 Bishop, Day, and David Ovenden. Commercial Insurers Primed for Intelligent Automation. *WillisTowersWatson.com*, June 29 2018, *https://www.willistowerswatson.com/en-US/insights/2018/06/emphasis-commercial-insurers-primed-for-intelligent-automation* (accessed September 15, 2019).

4 See *https://www.soa.org/programs/act-innov-tech/.*