Member Spotlight

A monthly highlight featuring an ASEG member. All past member spotlights can be found in our newsletter <u>archive</u>.



We welcome **Harikrishnan Nalinakumar** under the spotlight in this issue as he shares his enlightening story!

Hari is a PhD student at the University of New South Wales (UNSW) in Sydney and is not a stranger to ASEG as he is the secretary of the NSW branch.

As the ASEG NSW secretary, my role has allowed me to engage deeply with the geoscience community, contributing to its growth and outreach. This role enables me to contribute to the field I am passionate about and continually expands my understanding and connection with fellow professionals and enthusiasts in this domain. It's a role that brings both challenge and joy, and I am grateful for the opportunity to serve and grow with the ASEG community.

General questions

1. Can you briefly introduce yourself? How long have you been studying geophysics?

I took my bachelor's degree in Instrumentation Engineering, leading me to a fulfilling role as an Instrumentation Manager in a petrochemical refinery for nearly three years. Approximately four years ago, while doing my master's degree in Petroleum Engineering from UNSW, I studied Geology and Geophysics. I am pursuing a PhD in Petroleum geology at UNSW, a field that captivated my interest with its intricate blend of geology and technology.

2. Any field experiences? If so, something to share (like where it is, what you did, or interesting stories)

Before I arrived in Sydney, I had never participated in any field trips, making my subsequent experiences all the more significant. A standout experience in my journey through geoscience was an enriching field trip that took us trekking through the diverse terrains of Wollongong and the Blue Mountains. This excursion was more than just an academic exercise; it was an immersive adventure into the heart of practical geology, marking a significant first in my fieldwork experiences. Observing and analyzing these geological wonders firsthand was an eye-opening experience. It bridged the gap between theoretical knowledge and real-world application, bringing to life the concepts I had only read about in textbooks.

3. What made you decide to study geophysics/geoscience? Anything you enjoy most?

My decision to delve into geophysics and geoscience was driven by a deep-rooted fascination with the Earth and its intricate subsurface mysteries. There is something profoundly captivating about uncovering the hidden layers beneath our feet, understanding how they came to be, and what they can tell us about the past and future of our planet. This field offers a unique window into the evolutionary narrative of the Earth, encompassing a wide array of dynamic geological processes and the forces that have sculpted our planet over aeons.

4. What do you usually do in your spare time?



I like photography and driving.

A sample of Heri's photography.

5. What is a challenge that you see in geoscience today, and how do you see the community overcoming it?

One of the foremost challenges facing geoscience today is integrating rapidly evolving technology with traditional geological methods. As we enter the digital age, the geoscience community is presented with various advanced tools, for example, AI, machine learning, Deep learning, High-resolution imaging etc, which can significantly enhance our understanding of

Earth's processes. However, effectively merging these technologies with classical geoscientific approaches requires a concerted effort in upskilling, interdisciplinary collaboration, etc.

We can overcome this challenge by fostering a culture of continuous learning and innovation, encouraging geoscientists to embrace new technologies and integrate them into their research and exploration activities. By blending modern technology with traditional geoscience, we can make discoveries faster and more accurately, helping us tackle environmental and resource issues better.

6. What is the best way that the ASEG could let the public know about geophysics and its benefit to the everyday life?

Geophysics is very interesting to the public once we highlight how geophysics is used in everyday life, such as in natural resource exploration, environmental monitoring, and natural disaster prediction, it can make the field more relatable.

7. Do you think AI will take over your job or will the human element remain vital to exploration successes?

The evolution of artificial intelligence in geophysics has been a journey of significant milestones, especially in recent years. While AI technology has been developing for quite some time, the advancements we have witnessed lately have been exponential. Currently, we are at a stage where AI greatly assists in geophysical exploration rather than replacing the human element. AI's sophisticated analysis and processing capabilities have enhanced our ability to interpret data, predict outcomes, and streamline operations, but this technology still requires human guidance and oversight.

Looking ahead, it is conceivable that further advancements in AI and related technologies could reduce the necessity for human involvement in exploration processes. We might reach a point where AI systems can operate with minimal human intervention, handling most of the exploratory tasks efficiently and precisely surpassing human capabilities. However, I believe that the presence of humans will remain essential, at least to some degree, for overseeing operations, troubleshooting, and providing the nuanced judgment that AI currently lacks. The future might further diminish the human role in exploration, but for now, the synergy between human expertise and AI is paramount for achieving success in geoscience exploration.