# Member Spotlight

*A monthly highlight featuring an ASEG member. All past member spotlights can be found in our newsletter archive.*

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

Pooya is the WA branch treasurer. He is an exploration/CCS geophysicist with 15 years of experience.

I grew up surrounded by mountains and spent much time climbing them, skiing on them, and exploring caves and glaciers. The thrill of exploration led me to pursue geoscience degrees in mineral and petroleum exploration. I completed my undergraduate and postgraduate degrees at Tehran Polytechnic University before starting my career as a seismic geophysicist at PetroPars and then the NIOC Exploration Directorate. During my PhD at Curtin University, I researched the effect of supercritical $CO_2$ on shale caprock integrity as part of the South-west Hub carbon storage project. Since then, I have worked on various exploration and carbon storage projects in Australia.

1. ***Tell us who you are and what you do.***

   *I am an exploration and CCS geophysicist. I help Australian companies in their carbon storage journey by providing geophysical insights into subsurface integrity and storage potential. I specialise in subsurface imaging, geophysical data interpretation, and acquisition surveys. I have also attained some geochemical skills in assessing samples, such as XRD, SEM, MICP, NMR, and geochemical reaction path modelling.*

2. ***For how long have you been a geophysicist?***

   *I started working as a geophysicist at Petropars when I completed my master's in 2008. I have been a geophysicist my whole career, apart from about four years when I completed a research PhD at Curtin University. I have continued to work as a geophysicist in exploration and carbon storage projects in Australia since 2020.*

3. ***What do you like most about being a geophysicist?***

   *Exploration and adventure define my passion for geophysics. I love the thrill of discovery—whether it's uncovering hidden subsurface structures or working on new projects that push scientific boundaries.*

   *Fieldwork gave me the opportunity to travel. I enjoy exploring fascinating places and meeting different people. I've seen some extraordinary natural phenomena and rare historic sites and taken some amazing shots with my camera.*

   *As someone with a strong photographic memory and visual mind, I enjoy the imagination and imaging aspect of geophysics. Geophysics presents data in various visual forms and models, which is attractive to me. I enjoy building datasets, perfecting them, and illustrating aspects of them in visually compelling ways.*

4. ***If you weren't a geophysicist, what would you be?***

   *An architect. The blend of creativity, design, and technical problem-solving has always appealed to me.*

5. ***What made you decide to be a geophysicist?***

   *During my undergraduate studies in mining engineering, I took geophysics courses that fascinated me. The ability to image and interpret the Earth's subsurface for exploration felt like a perfect mix of science and creativity.*

6. ***What reaction do you mostly get when you tell someone that you are a geophysicist?***

   *Most look confused. I have to use words like exploration or tell them I show drillers where to drill for oil and gas! Close friends see my job as Chandler's job (Friends sitcom), they still aren't sure what I do, just that I work in oil and gas companies. Some people often assume I have no trouble finding work in WA or that I must be earning a fortune!*

   *Most people look confused when I tell them what I do. I usually have to use words like 'exploration' or say that I show drillers decide where to drill for oil and gas. Close friends joke that my job is like Chandler's from Friends—they still don't really know what I do, only that I work in the energy industry! Some assume that finding work in WA must be easy for me or that I'm making a fortune.*

7. ***When asked what you do – what do you do?***

   *I use the ultrasound analogy. I asked them if they'd seen a baby ultrasound image. Then, I explained that I image the earth's subsurface in the same way you can see the baby through sound waves, only bigger and more complicated.*

8. ***What aspect of geophysics do you enjoy most?***

   *The integration of different datasets to create a coherent picture of the subsurface. It's like solving a giant puzzle with science and technology.*

**9. Who is your most respected geophysicist?**

*I have been fortunate to learn from many great mentors throughout my career. Prof. Javaherian, my master's degree supervisor, was one of my most influential professors and an exceptional mentor. During my time at Molyneux Advisors, I had the privilege of working with several seasoned professionals. Jeffrey Schrull provided invaluable insights into reservoir-level interpretation, while Frank Glass guided me in regional interpretation, both of whom greatly shaped my approach to geophysics.*

**10. What's one thing that we wouldn't know about you?**

*I have climbed all the major mountain peaks in Iran. The Alborz and Zagros ranges have over 40 peaks above 4,000 metres, including Mount Damavand at 5,700 metres.*

**11. What is your funniest or worst field memory?**

*During a field survey, our team was working with local guides to collect data. At one point, the supervising geophysicist made an obvious mistake. The locals traditionally referred to all geophysicists as "Mohandes" (meaning engineer) regardless of their actual qualifications. One of them, visibly puzzled by the error, asked, "Mohandes, do you even have a diploma?"—unaware that engineers must have at least a bachelor's degree. The entire team burst into laughter, and from that moment on, whenever someone said something questionable, we'd jokingly ask, "Mohandes, do you have a diploma at least?"*

**12. Where was your best sunrise/sunset location?**

*Sunrise: Climbing Sabalan Mountain in Iran, watching the sun illuminate the crater lake at the summit.*

*Sunset: City Beach in Perth, striking a "Simba pose" with the sun dipping below the horizon.*

*Sunset: City beach with the Simba pose*

**13. Tell us about a challenge you overcame, and how did you do so?**

*Geophysics is a field full of fascinating challenges and overcoming them can often lead to innovative breakthroughs. One major challenge is the inherent complexity of the geophysical inverse problem. In practice, you're often trying to deduce subsurface properties from indirect, noisy, and incomplete data. This "ill-posed" problem means that multiple models might explain the same observations, making it difficult to pinpoint the exact structure or composition underground. In a project in the North Perth Basin, with sparse 2D lines, this showed itself. The model-based approach to interpreting the horizons and faults was the key. We built a forward geological model using prior information about the regional geology. This model integrated known stratigraphic trends, depositional environments, and typical fault geometries from nearby analogue fields. It allowed us to correlate disjointed horizons and accurately map the faults, revealing the true structural architecture of the subsurface. The insights gained from our refined model led to a successful drilling campaign, proving that even with limited 2D data, a robust, physics-based interpretation could unlock valuable hydrocarbon prospects.*

***14. Do you have any volunteering experience?***

*Yes, I currently serve as the ASEG WA branch treasurer. I have also volunteered with EAGE as a session chair and as a workshop instructor at Curtin University.*

***15. What's one thing you wish someone had told you when you were at university?***

*Your career path won't be linear. Stay adaptable, embrace new challenges, and keep learning beyond your formal education.*

***16. What is your best interview tip?***

*Make sure your "why" aligns with the organisation's "why". First impressions matter, so convey both emotional and logical reasons for your interest within the first 10 to 15 minutes.*

***17. What are you reading at the moment?***

*Reading "Quiet: The Power of Introverts in a World That Can't Stop Talking" by Susan Cain led to some more interesting reads, such as "Quietly Confident: An Introvert's Guide to Knowing and Expressing Your Worth" by Kate James. I also am reading some other books that I should have read years ago, such as "Atomic Habits" by James Clear and "How to Talk to Anyone" by Leil Lowndes.*

**18. What do you do in your spare time?**

*Camping, four-wheel driving, hiking, and playing classical guitar.*

***19. What's your most treasured textbook?***

*I referred to "Seismic Data Analysis" by Öz Yilmaz over and over again during the second year of my master's. It's practically the bible for seismic processing, covering everything from basic principles to advanced techniques. I read the migration chapter multiple times, trying to understand the concept and methods.*