

All of our member spotlights have been listed on [our website](#). Please have a read on their stories!

Dear spotlights audiences, thanks so much for your support for this section! For the last two shining lights in 2022, we will have CAGE (Camp for Applied Geophysics Excellence) volunteers **Sasha Aivazpourporgou** and **Wei Xuen Heng**. Thanks so much for their and other volunteers' time and works to make CAGE so successful!

Let's hear from **Sasha**, the senior geophysicist in GSQ, this time.

Something about the CAGE:

1. What is your motivation to volunteer in CAGE?

Volunteering is a great opportunity to network and learn. I guess since it is not a paid work, to some level, there are lesser expectations from you, which makes the learning process less stressful.

2. Interesting stories to share about this camp?

The most interesting was the diversity of the people who attended the camp. The best part was working hard with amazing volunteers as a team for a good cause and meeting young enthusiastic people.

3. Any ideas about what we could do better for the next CAGE?

We, as demonstrators and organisers, all agreed that there is certainly place for improvement. It is hard to pick one at this stage because we are still working on the feedback from attendees. But if there is one to answer your question: to pick a campsite where drinking is allowed :) although admittedly we didn't use our first aid kit in the camp at all, which perhaps reflects on the fact that drinking when camping as large groups and safety may not go hand in hand.



General questions

1. For how long have you been a geophysicist?

Almost 10 years. I have been in geophysics since 2007, but I have spent lots of time in university doing a master's degree and a PhD in Geophysics. I started working in academia and industry after I finished my PhD in 2013.

What do you like most about being a geophysicist?

I love it is an unending learning journey pulse being outdoors is a winner.

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

Wow, I think whoever was in the CAGE knows the answer. We had a quiz night during the camp, and I was the quiz master. There were lots of PhD students in the participants and I thought to tell them a heart-warming story at the beginning of the quiz night to cheer them up. I told them almost everyone that I

have met who has done a PhD came to this point that “I am not sure that is what I wanted to do” and they thought they could have been something else. A popular choice was “being a chef” during my time in Monash for example. I thought I wanted to be a stand-up comedian, but my English was still not so great, and I told my husband that I want to be a “stand comedian”! I have tested this as my opening line for Trivia night in CAGE, and it worked. I cheered people up.

2. What is your best interview tip?

Do your research and ask questions about what you are expected to do. Not just because you may not be able to do it because it might not be the one you would like to do it.

3. Tell us about your best field meal?

Hard one. This trip was better than the other ones. I love my vegetable, and that is hard to get when you are outback. On this trip, we had a chef for dinners at the campsite, and he made the best Beef Ragu Pasta one night, although it had no vegetables. I said I love vegetables, didn't I?

4. Where was your best sunrise/sunset location?

Sunrise in Abel Tasman National Park, New Zealand and Sunset in Maui Island, Hawaii

5. What are you reading at the moment?

I am trying to read two books, and they are going nowhere as you can imagine with the busy life of a young family with two kids. I may finish them in the next 10 years One is in Persian, my first language. It is a romantic novel placed in Tehran about 150 years ago and it is very insightful about the modern history of Iran and the culture. The second one is from Alein De Botten, a beautiful book called “How Proust Can Change Your Life”. Proust certainly is one of my favourite philosophers.



6. What made you decide to be a geophysicist?

I did an undergraduate in Physics at the University of Tehran, and I started working in a physics and mechanic lab at the Peugeot company back in Iran immediately after graduation. I was very young and thought I like to make money. My job was working with a machine called CMM to make 3D measurements of produced car parts in the production line. It looked cool when I started. I have to program a robot using cloud points and make fixtures for parts (looked like Lego for adults), but after 2 years it was boring because a car can only have a certain number of parts, right? A coincidence, I met one of my undergraduate friends that studying for a master's degree in geophysics at Tehran University. He was back from this cool field trip with a bunch of geologists in Central Iran in Zagros Chain Mountains, which are absolutely stunning geology and landscape, and I really felt that was much cooler than being every day in a lab doing the same thing. So that was it! I started preparing

for the entrance exam because you have to pass an exam in Iran to go to the university, doesn't matter what level, undergraduate, master and PhD. And that was it the year after I started doing a master's degree in Electromagnetic, but I kept the job because I needed the money.

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

Your mentors are important. They have a major role in your career and the path you will take. Pick your mentors wisely.

8. Your funniest or worst field memory?

Oh god. When I was doing my PhD in Victoria, it was flood years, meaning apparently every 10 years there is one year that rains every day! If you look at the BOM, 2010 and 2011 (when I collected my data) were the wettest years in Australia from 1900. I was more than halfway through my PhD, and I had the first season done in 2010, and half of the data was noisy. You can imagine MT and rain don't go well together. Also, it was the lowest sunspot activity that was the source of our signal. So we didn't have much signal either. In western Victoria, there are lots of clay in the soil, and because of that, the water does not drain quickly. In probably spring 2011, I would check the flood warnings every day, and I finally found three weeks window in that I could go out to the field. I had 12 sensors, and I put them on the ground, or I have to say buried them. The sites were 30 km apart, and it was lots of driving every day, almost about 500 km some days if we were recovering sites. When the 12 deployments were done we went to the accommodation and that very night, Western Victoria got flooded when the soil was already saturated with plenty of water. I went back to the sites the day after and found 3 flooded pieces of equipment and 1 partially flooded, which I managed to dry with a blow dryer back in my accommodation. The first thing that came to my mind seeing that flooded equipment was no way I finish this PhD! But surprisingly, I got some data finally.

9. Your most respected geophysicist?

Bill Amman from Newexco Ltd Pty. He has 40 years of experience with EM, and unlike our generation of geophysicists he did not have computers to do

processing and modelling, so his understanding of Geophysics is certainly on another level. I am also grateful to Nick Ebner, one of the current directors of Newexco, who gave me a chance to work in the company when I really didn't know much outside of my research interest and has been one of my mentors along the way.

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

One of the problems is the environmental concerns that the new generation of students has around the mining industry. We see that a lot especially first-year students in the university. For example, they assume a green future will happen if you stop using fossil fuels and start using electric cars. We, as geoscientists, know an electric car battery requires 10 times more copper than a normal car battery. Do you think everybody knows that? I am certainly not. The number of undergraduate students in geoscience has been reducing around Australia in the last few years, and this is one of the main reasons. We need to be proactive and educate everyone that sustainable and responsible mining is what we need.

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

One of the biggest problems in Australia at the moment is that the geoscience departments are being shut down by the universities purely because of the low number of undergraduates interested in geoscience. The most shocking one has been the geoscience department of Macquarie university which had high-profile researchers with many grants such as ARC grants and amazing publications records but got shut in 2020 or 2021. We need to go to high schools and introduce high school kids to geoscience. Many of us got into geoscience by accident, and very few of us knew about geoscience before coming to university. I think we should make some avenues with help of universities to interact with high school students, introduce them to geoscience and how we can have a green future if we do it right.

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

Wow, I guess what time frame you are looking at. In 50 years or in 5 years? A good example is Google, it is working really well when you search with a couple of critical keywords, right? It wasn't the case when Google started. The machine does better with more data and more sophisticated training methods. If you are only speaking of image processing and classification problems, those are simple in concept, an image is a grid of RGB values, and to some level pulling information out of those pixels is very achievable. If we keep doing what we are doing at the moment with image processing soon machines become very good at it, and we can facilitate it cheaper and faster. But when it comes to targeting, we need plenty of research ahead of us to know how to tackle it. In geophysics, data inconsistency (in terms of density, resolution, and metadata) is probably one of our biggest challenges of AI and ML, and those can not be solved with machines yet.

13. What do you think of the covid impact on the geophysical industry?

I guess the overseas projects and field trips would have been affected more because entering Australia wasn't guaranteed. The AEGC conference 2021 was postponed two times and in the end was held virtually in Brisbane. It was a very hard decision to make for the organisers because the covid restrictions in Brisbane were constantly changing and we were hoping at least the people from Brisbane could attend in person.