Why are female engineers needed?

How did you start your career in engineering?
I always loved building models and tinkering with things, but in my secondary school years I hadn’t considered engineering.

When I was in (the equivalent of) Y12, I took part in a project that allowed me to study the first year of Computer Science in university, and while I achieved (the equivalent of) a 1st, I knew it wasn’t right for me. I got some work experience at a start-up company developing communications platforms, and got hooked. I kept working part time in this company even after I started my bachelor degree.

What is your research area?
I am an Electrical Engineer, working on digital electronics. More specifically, my expertise is in computer engineering, working on programmable hardware and computing infrastructure.

My research bridges the gap between low-level, micro-architecture of electronic devices, and macro-level, large scale networked-systems (e.g. cloud computing).

In recent years, I’ve been focused on a new type of computing: in-network computing, where applications usually running on a computer are offloaded to run within network devices. We have demonstrated x10,000 improvement in performance and x1,000 increase in power efficiency!

What attributes and skills help you in your role?
The most important requirement in my line of work is being a team player.

You rarely get to work alone, and even in an academic project you get to collaborate with many people, as different people bring different expertise, and each person makes a unique contribution to the project.

Unlike other fields, I am lucky to be working in a research discipline that is highly collaborative and encourages co-creation and peer-support over competition.

The second attribute is grit. Hardware projects are longer term than software ones, and you need to have the passion and perseverance to help you to the (successful) finish line.

What top tip would you give girls or women considering a career in Engineering?
Engineering is so much more than the name implies. It is enough to look at all the different types of engineering: Information Engineering, Civil Engineering, Mechanical Engineering, Biomedical Engineering, Electrical Engineering – and I still haven’t counted them all!

There is something in engineering for anyone who wishes to create, and has the desire to learn how to.

Have you faced any gender-related challenges?
Yes, lots of times. Even today, when I answer my phone, people often mistake me for "Professor Zilberman’s secretary".

Luckily, there are many tools and mechanisms today to support under-represented groups in Engineering (and STEM at large). From mentoring schemes, support initiatives, improved monitoring and reporting mechanisms, zero tolerance to inadequate behaviour and more. Every department, college and research interest group have such programmes, and there is always someone that you can speak with.

What has been your proudest moment?
I can’t pinpoint a single moment. Professionally, there are a lot of “firsts” that I am proud of: The first time a student’s paper was accepted to a conference, the first time a student was invited to deliver an invited talk on their project at an international event, the first time a group’s project won an award.

I’m lucky enough to still have lots of proud moments.