



Bright Futures - Engineering a way forward

LISA JOHNSTON - Apr 18 2005 00:00

0 comment(s) | Post your comment

With her colourful clothing and breezy charm, Michaella van Vuuren doesn't fit into the usual stereotype of what an electrical engineer should be like.

But, says Van Vuuren, it is exactly this type of misconception - that engineering is a man's game in a man's world - that prevents many women from accessing a potentially stimulating and creative career.

Van Vuuren obtained a PhD in electrical engineering from the University of Cape Town where her research focused on developing a system that would enable computers to recognise and mimic human postures and actions, as well as a system to detect and track human eye movement.

She now works for the Council for Scientific and Industrial Research (CSIR) on a joint development project with the government that aims to address the way in which people with disabilities are often excluded from society. The idea is to create an information portal that allows disabled people, as well as their caregivers and people in the medical profession access to information about services, rights, grants and health provisions. By building computer systems that convert written material into sign language and speech, the team hopes to shatter the barriers that prevent disabled people, particularly those who are illiterate, from accessing information.

It is an exciting project that fulfils Van Vuuren's notions of what makes a good electrical engineer. These are: someone who works well in a team; who is curious about the world around him or her; who thinks problems through from start to finish; and someone who is creative.

Van Vuuren believes the profession could do with more women and the dynamics they bring. But, "There are barriers to entry for girls, but you have the right to choose the career you want to pursue."

These barriers usually start at school level, where girls are rarely encouraged to continue their studies in maths and science. A reason that is often given for the lack of female engineers is that there aren't that many female school leavers with the higher-grade maths qualification necessary to get into engineering at university.

"Boys tend to assume that they should be able to do maths and have technical skills, so when obstacles come up, they try harder to overcome them. Girls are taught that they can't [do maths] so when they struggle, they tend to see this as a confirmation of their inability and give up. But, Van Vuuren says, "Maths, physics and technical skills are like riding a bike; no one is born able to ride. The more you practice the better you get."

Another obstacle is that female learners are not always aware of the many exciting career opportunities that a degree in engineering can lead to. These include creating innovative systems from the conceptual stages through to development, such as surveillance systems that recognise faces and track suspicious behaviour.

▼ CONTINUES BELOW ▼

ARTICLE TOOLS

- Add to Clippings
- Email to friend
- Print

MORE TOOLS

- Add to Facebook
- Add to Muli
- Add to delicious
- Blog Reactions
- Digg this story

LATEST ARTICLES IN THIS SECTION

POPULAR ARTICLES IN THIS SECTION

- 24 Hours
- 1 Week
- 1 Month

YOUR M&G ONLINE

- SUBSCRIBE TO M&G
- ON YOUR PHONE
- ON YOUR DESKTOP
- VIA PODCAST
- ON YOUR WEBSITE
- VIA RSS FEED
- IN DIGITAL PDF
- PLACE AN AD

READ OF THE WEEK



- More on this book
- More M&G books
- Previous books
- Go to Exclusive
- Win books

THIS WEEK'S PAPER



- Subscribe
- Subs promotions
- Get digital edition

ADVERTISEMENTS



ADVERTISING LINKS

- FREE CALLING CARD
- FIRST FOR WOMEN
- ONLINE CASINO
- LIFE INSURANCE
- INTERNET SOLUTIONS
- BUY TECHNOLOGY
- MAP SEARCH
- HOLIDAY FINDER
- ONLINE SHOPPING
- INSURANCE

"Remember," says Van Vuuren, "You don't have to fit a stereotype

Careers

Typical careers in engineering include:

- Designer, industrial:

An industrial designer designs or improves useful consumer articles from kettles to cars and furniture. Key factors that the designer needs to consider are function, user friendliness, appearance, cost, safety, and maintenance and the environmental impact of the product and manufacturing methods used.

- Engineer, aircraft designer:

An aircraft designer is an aeronautical engineer who designs aircrafts and their subsystems and components. This involves choosing materials and production methods as well as developing new production methods and evaluating and checking modifications to ensure safety.

- Engineer, biochemical:

Living organisms are used to produce a vast range of substances from beer to highly-specialised compounds such as pharmaceuticals. Biological processes are also used to treat aqueous effluent ranging from domestic sewage to heavy metals. The biochemical engineer uses his or her knowledge of chemistry, biology and processing to improve the design and operation of these processes.

- Engineer, biomedical:

A biomedical engineer applies engineering principles as well as the natural sciences, mathematics and computer science, to understand the workings of the body, including the nature of disease. With this knowledge the biomedical engineer designs medical equipment and is involved in the development of more effective artificial limbs and the selection of materials for implants.

- Engineer, environmental impact assessment:

An engineer in this field is responsible for detailing the possible environmental consequences of an industrial or commercial activity in a given area.

TOPICS IN THIS ARTICLE

SA Prime Rate Cut

See how much you will save with the 1% interest rate cut

Online Share Trading

Free courses: investing, trading, derivatives, fundamentals & charting

Ads by Google

ARTICLE COMMENTS

You must be logged in to comment. [log in](#) or [sign up](#) to comment

[click here to log in](#)

ADVERTISING LINKS

- [Life insurance made simple](#) No medical examinations. No HIV test. No application forms. Quote me now!
- [Looking for a reliable IT supplier?](#) Shop at PCMall.co.za for the best prices on all PC and technology equipment, notebooks, etc
- [Private Property listings](#) List your property with us or search for a property. No estate agent's commission
- [Free calling card](#) Sign up for Pingo pre-paid calling and receive 50% on your calls to South Africa.

[Make us your home page](#) | [Add our headlines to your site](#) | [Desktop news with NewsFlash](#)

[Contact us](#) | [About us](#) | [Story tip-offs](#) | [Online advertising](#) | [Print advertising](#) | [Subscriptions](#) | [Topics A-Z](#) | [Corrections](#) | [Mobile sites](#)

All material © Mail & Guardian Online. Material may not be published or reproduced in any form without prior written permission.

Read the site [privacy policy](#) and [Isipa code of conduct](#) relating to our blog hosting.  [RSS feed](#)

This site is proudly hosted by [Internet Solutions](#). We are a member of the [Online Publishers Association](#).

