

# Changing the flow of CFD technology



By [Evan-Lee Courie](#)

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Based at the University of Cape Town, Elemental Numerics was established in 2013 to commercialise the Elemental software that was developed by associate professor, Arnaud Malan of the Mechanical Engineering Department.



Arnaud Malan, one of the co-founders of Elemental Numerics

Elemental software is said to be a giant leap for technology, which uses novel mathematical models and equations in the field of computational fluid dynamics (CFD) – enabling scientists to study the dynamics of fluid flow, offering accurate predictions and unprecedented insights.

In other words, it is a sophisticated analysis technique offering multiple predictions with diverse applications from aircraft design to heart valves. The versatility of the software allows for countless applications in collaboration with other departments and faculties across the university.

Elemental Numerics was selected to take part in the recently concluded #Africa4Future, an initiative between Airbus BizLab and the GIZ's (the Deutsche Gesellschaft für Internationale Zusammenarbeit) Make-IT in Africa. The programme is being implemented by Meltwater Entrepreneurial School of Technology (MEST) and InnoCircle to drive innovation, build businesses and unlock new potential.

We chat to Arnaud Malan, one of the co-founders of Elemental Numerics...

▣ ***Can you tell us a bit about Elemental Numerics?***

Elemental Numerics is the owner of the Elemental software suite, created from years of research in the field of computational fluid dynamics (CFD). The software constitutes the next generation in CFD technology. It addresses industrial fluid flow problems in one package while accounting for multiple physical phenomena (multi-physics) with unprecedented computational speed and accuracy.

▣ ***What is the core function of Elemental Numerics?***

We provide bespoke CFD solutions to industry.

▣ ***What are some of the obstacles you've had to overcome since starting out?***

One of the main challenges we've had to endure was probably to apply our limited resources as strategically and effectively as possible.

▣ ***What advice would you give to other aspiring entrepreneurs?***

Keep on keeping on!

▣ ***What has been your proudest achievements thus far?***

We won the Best Innovation in Flight Physics in Airbus for 2017/18 for the design improvement of the Airbus A320 and more recently being selected as one of ten African startups to take part in the #Africa4Future accelerator program.

▣ ***What does the future of entrepreneurship look like to you?***

As the world becomes more technologically advanced and improved communication drastically increases the sphere of influence of each individual, we will need more entrepreneurs to "fill in the gaps" of human development.

▣ ***What is the importance of startup accelerator/incubator programmes?***

It's crucial. For one, it prevents startups from repeating common mistakes. But more importantly, we believe a healthy, growing economy needs a strong startup ecosystem.

▣ ***What would you like to see changed in the South African/African startup landscape?***

The size! We need to grow it. And adding to the previous question: we need more accelerators, incubators combined with early-stage seed investment to get more startups to revenue and convert to scale-ups.

▣ ***What do you believe are the traits an entrepreneur needs in order to succeed?***

Humour.

■ ***Why would you encourage someone to become an entrepreneur?***

Because there is a huge amount of unused entrepreneurial potential in society.

■ ***Where would you like to see Elemental Numerics in the next 5 years?***

An established brand internationally with a dynamic team of at least ten people forming an agile, specialised unit with the hallmark of a solid company culture.

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