

Career Profile: Software Architect

The cell phone you use can only operate because of specifically designed software. From simple cell phone operations to more complex air traffic control systems, software has made it possible for people to operate equipment, communicate with each other, and carry out a multitude of personal and business functions. Innovative organizations such as Amazon.com owe their existence to software. In today's technological world all organizations and businesses rely on quality software to manage their day to day operations.

The software architecture of a computing system or programme includes all the important design decisions about the software structures and the interactions between the components that make up the system as a whole. A software architect is a top level member of the software development team and takes a technical lead in any software development project. You can liken the software architect to a film director. S/he must ensure that the software is conceptualized and developed correctly and that it ultimately satisfies the needs of the client.

Education Requirements

National Senior Certificate (NSC)

For a career in ICT students are advised to select Mathematics and to add to this a selection from the designated subjects. These are subjects that are particularly suitable for tertiary study.

Bachelor Degree

Bachelor of Science (Computer Science) – BSc (CS) (3 years)

Bachelor of Science (Information Technology) BSc (IT) (3 years)

Generally the computer science degree focuses more on the theoretical base while the information technology degree focuses more on applications.

Offered at:

- [North-West University](http://www.puk.ac.za/fakulteite/ing/electrical/index_e.html)¹ (Potchefstroom Campus - Electrical, Electronic and Computer Engineering)
- [University of Johannesburg](http://www.uj.ac.za/Default.aspx?alias=www.uj.ac.za/compengineer)² (Department of Electrical and Electronic Engineering Technology)
- [University of Pretoria](http://www.cs.up.ac.za/prospective/undergrad)³ (Computer Science)

¹ http://www.puk.ac.za/fakulteite/ing/electrical/index_e.html

² <http://www.uj.ac.za/Default.aspx?alias=www.uj.ac.za/compengineer>

³ <http://www.cs.up.ac.za/prospective/undergrad>

- [University of the Witwatersrand](#)⁴ (School of Computer Science)
- [University of Venda](#)⁵ (Computer Science and Information Systems)
- [UNISA](#)⁶ (School of Computing - Software Engineering)

Specializations offered:

The universities offer several specializations including some 4 year options at Pretoria University.

North-West University

BSc (Information Technology)(in Afrikaans only)

University of Johannesburg

BSc (Information Technology)

University of Pretoria

BSc (Computer Science), BSc (Information Technology), BIT (Information Technology – 4 years), BIS (Information Science specialising in Multimedia – 4 years)

University of the Witwatersrand

BSc (Computer Science)

University of Venda

BSc (Computer Science)

UNISA

BSc with specialisation in Information Technology and Computer Science (Software engineering stream).

Admission requirements

As admission requirements vary from one institution to another, find out what the specific requirements are by checking on the website and contacting the university if you have any queries.

Possible Employers

- Public Service
- Banks
- Large corporations
- Medium sized businesses
- Consultancies.

⁴ <http://www.cs.wits.ac.za/>

⁵ http://www.univen.ac.za/math_natural_sciences/computer.html

⁶ http://brochure.unisa.ac.za/brochure/showprev.aspx?d=l_4_0_2&f=p_02089ISE

Find out more

Find out more about developing IT products and solutions as a software architect:

- [A good overview of the knowledge and skills a software architect requires.](#)⁷
- [Some views on what is required of a software architect.](#)⁸
- The first of a four-part article on [what is a software architect?](#)⁹
- [A useful diagram showing where software architecture fits in the product development process.](#)¹⁰ You may find other elements on this website interesting but possibly heavy going.
- Access to a [four-part series on software architecture](#)¹¹ and the role of the software architect.

⁷ http://www.bredemeyer.com/pdf_files/ArchitectCompetencyFramework.PDF

⁸ <http://www.andrewj.com/thoughts/characteristics.htm>

⁹ <http://www-128.ibm.com/developerworks/rational/library/feb06/eeles/index.html>

¹⁰ <http://www.bredemeyer.com/where.htm>

¹¹ <http://www.ibm.com/developerworks/rational/library/mar06/eeles>

Are you suited to this career?

This quick quiz can help you to identify whether you are suited for this occupation.

Quiz	Yes	No
Do you feel comfortable taking a leading role in a team?		
Do you have above average ability in Mathematics?		
Are you able to view an issue from multiple viewpoints?		
Are you self confident and self driven?		
Do you communicate well both orally and in writing?		
Are you imaginative and creative?		
Do you enjoy new challenges?		
Do you enjoy investigating any issue in order to get a better understanding?		
Are you able to work well with others and do they have confidence in you?		
Can you work well under pressure?		

If you have mainly yes answers it may be an indication that this is an occupation to consider.