

VACANCY AD – 2018 (APPLICATION DEADLINE: 17 APRIL 2018)

1. POSITION

Position Title: Data Scientist – 6-month contract, renewable
Location/Area: South African Cities Network (SACN) Main Office
 Braamfontein, Johannesburg
Position Reporting To: Programme Manager: CDS
Start Date: ASAP; Ideally by 01 April 2018

2. POSITION DETAILS

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JOB TITLE: Data Scientist	GRADE:
INCUMBENT: Vacant	REVIEW DATE: June 2017
NO OF INCUMBENTS: 01	REF. NUMBER:
LOCATION: Braamfontein	MANAGER: PM: CDS / Systems

2. APPROVALS

APPROVED	NAME	SIGNATURE	DATE
Analyst			
Incumbent			
Supervisor			

3. DESCRIPTION

Background

The South African Cities Network (SACN) is an established network of South African cities and partners that encourages the exchange of information, experience and best practices on urban development and city management. Since 2002 the SACN's objectives are to:

- Promote good governance and management in South African cities
- Analyse strategic challenges facing South African cities
- Collect, collate, analyse, assess, disseminate and apply the experience of large city government in a South African context
- Encourage shared learning partnerships among spheres of government in order to enhance good governance of South African cities.

The SACN has published a [State of South African Cities Reports \(SoCR\)](#) since 2004, and each of these reports present a 5-year perspective on the performance and conditions of South Africa's largest cities, with a focus on the SACN member cities (primarily SA's metropolitan municipalities). The SoCR process has included a data almanac section in which key metrics relating to each of the nine largest cities in the Country are captured. It has been long-envisioned to have an online city data portal that allows dynamic sharing, access and use of live data and indicators that are important to cities. In July 2016 such a website was launched in conjunction with the State of Cities Report 2016.

The South African Cities Open Data Almanac or SCODA (<http://www.scoda.co.za/>) is a city-centric data portal that aims to support the planning, management, monitoring, and reporting needs of cities. With the fast-changing and increasingly complex dynamics of contemporary South Africa where the majority of people now live in cities, monitoring how cities are planned and managed is important. Indicators are critical to effective planning and management in urban contexts, organising information sets into simpler, and easier to understand and compare 'measures' of what is happening. Good urban indicator sets allow for a longitudinal perspective (i.e. change over time) and comparisons between cities locally, continentally and internationally, enabling cities to assess how effectively they are engaging with their objectives.

SCODA currently contains data and indicators organised around SACN's key thematic areas:

- Productive cities
- Inclusive cities
- Sustainable Cities
- Well-governed cities
- City demographics

Each theme has a set of core and secondary indicators.

SCODA is run by the [South African Cities Network \(SACN\)](#), in partnership with Open Data Durban, a non-profit civic technology lab that implements and advocates for open data, open government, and civic technology in order to encourage the exchange of information, experience and best practices on urban development and city management.

The SCODA site provides a framework to enable an ongoing process of making city data accessible. Through a partnership with the World Council for City Data, SCODA also seeks to align to the ISO 37120 Standard on City Indicators so that South African cities can learn from global practice, and also benchmark themselves against international peers.

<http://www.scoda.co.za/>

Key Role & Responsibilities

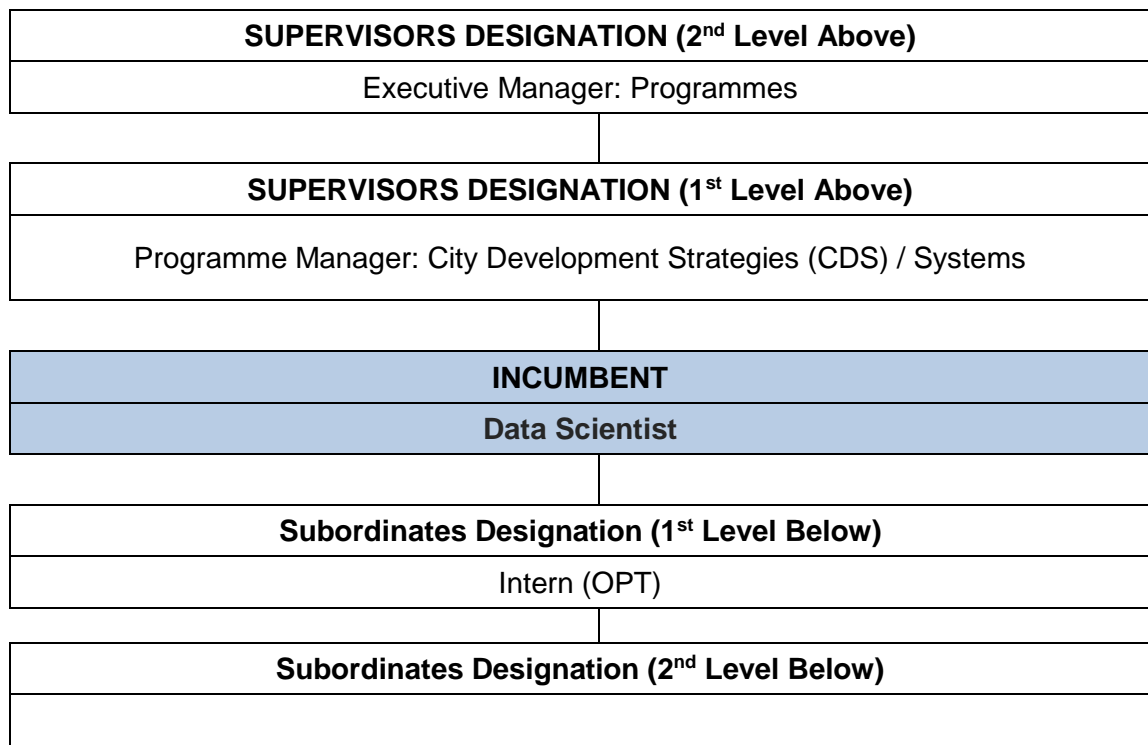
SACN seeks to engage the services of a contractor to creatively and technically fulfil the function of a data scientist and information architect to enable the work and goals of the SACN in relation to curating the content, and facilitating the progressive growth and improvement of SCODA in partnership with ODD. Specifically, the Data Scientist is envisaged to source, clean, collate and analyse urban data. The applicant must be familiar with and be able to undertake statistical analysis with advanced knowledge of the fundamental tools and techniques required for data science and visualisation. In addition, the applicant should have a good knowledge of, and experience with, database programming skills, be familiar working with in big data environments (but not essential) and be able to undertake data analytics. Further information is listed in the core competencies below.

The data analysis skills should be combined with an understanding of the South African urban planning / local governance and public administration domains so as to be able to analyse and interpret large data sets; to engage with government administrations; curate the interactive sharing of this information through the SCODA platform; and to support data-driven solutions to urban challenges among targeted stakeholders (these primarily local authorities and the SACN itself).

The successful outcome will be the effective development and deployment of the SCODA platform as a usable and useful commons for metro data champions and other core user groups identified, including ensuring that it can serve as a resource for SACN's State of Cities Reporting.

4. ORGANISATIONAL STRUCTURE

Organisational structure showing the position with two positions above and two positions below.



5. EDUCATION (Minimum level necessary to perform the job).

1.1 Ability	
1.2 School	Grade 12 or Equivalent
1.3 Professional / Tertiary	Bachelor's degree or certification in a relevant field such as statistics, math, computer science, informatics, economics, etc. <i>*Relevant experience and peer review may be used to</i>

	<i>supersede this formal training requirement.</i>
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<p>6. EXPERIENCE (Minimum necessary before being considered for the Job)</p> <ul style="list-style-type: none"> • Three or more years of sound experience in active data science work. • Good understanding of civic tech / data collaboratives, and their potential role in improving public services. • Strong problem-solving skills with an emphasis on user requirements and developmental objectives. • Experience working with and creating data architectures. • Knowledge of a variety of machine learning techniques (clustering, decision tree learning, simulation, scenario analysis, modeling, artificial neural networks, etc.) and their real-world advantages/drawbacks. • Knowledge of advanced statistical techniques and concepts and experience with applications. • A drive to learn and master new technologies and techniques. • Knowledge and experience in statistical and data mining techniques • Excellent knowledge and experience in using MS Excel • Experience with GIS-based analysis • Experience querying databases and using statistical computer languages: SLQ, etc. • Experience using web services • Experience analyzing data from 3rd party providers: Google Analytics, etc. • Experience visualizing/presenting data for stakeholders • Excellent written and verbal communication skills for coordinating across teams, engaging a wide variety of stakeholders from multiple disciplines, and managing a range of expectations • Demonstrated experience and comfort working with a wide range of stakeholders and functional teams (particularly in a small and dynamic office environment), and willingness to learn and teach in a complex and diverse environment. • Familiarity with the research or practice around issues which the SACN concerns itself with (urban development planning, local governance, public administration) would be an added advantage.
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<p>7. TRAINING (Essential training received in addition to the above experience to perform the job).</p> <ul style="list-style-type: none"> • SACN Strategy 2021, Business Plan and Annual Performance Plan • SACN Systems: SharePoint, SCODA, State of the City Reports

<p>8. PERIOD OF ON-THE-JOB TRAINING</p> <p>NA</p>
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<p>9. CORE COMPETENCIES</p> <ul style="list-style-type: none"> • Statistics • Data reporting technologies, including complex data representation and infographics
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- Databases
- Programming languages
- Machine learning
- Effective communication skills
- Exceptional attention to detail / quality assurance.
- Excellent customer service skills
- Meet reporting and administrative requirements.

Minimum qualifications:

- BA/BS degree or equivalent practical experience.
- Applications development experience, working in Unix or related environments.
- Experience with cloud computing platforms like EC2 and Heroku.
- Experience with relational databases.
- Programming experience in Python.
- Data analysis experience in Python or R

Preferred qualifications:

- Experience in web frameworks and experience with web standards, including HTML5 and CSS3.
- Experience with web application frameworks like Flask, or Django
- Significant experience with the Python scripting language and with data science in Python or R.
- Significant database experience and knowledge of geometric / geographic database techniques.
- Ability to communicate to all levels of users (internal and external), strong problem solving skills, adaptable, proactive, and willing to take ownership.

10. POTENTIAL CAREER PATH GUIDELINE

CAREER PATH OPTIONS		
UPWARDS WITHIN DEPARTMENT		LATERAL BASED ON SKILLS OBTAINED
	Programme Manager: Systems	
INCUMBENT	Data Scientist	

3. TIME SCALE

This is a contract rather than a permanent post. The position is envisaged as a six-month contract post initially, with the possibility of renewal or extension into a longer-term position based on viability and performance.

4. APPLICABLE TERMS & CONDITIONS

This post is advertised on a rolling basis. The SACN reserves the right to award this post as soon as a suitable candidate is identified, as well as the right not to award at all or to renegotiate its terms, subject to circumstances and adequacy of submissions.

Unsuccessful applicants will be notified once a selection / appointment has been made.

5. SUBMISSIONS AND ENQUIRIES

Potential candidates meeting the post criteria are invited to provide SACN with the following:

- ✿ A covering letter indicating understanding of the post requirements, and any particular qualities or suitability; and
- ✿ A current and directly Curriculum Vitae that includes relevant contact details and current References.

E-mail your submission or enquiries to sadhna@sacities.net. Technical enquires may be directed to peter@sacities.net.

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