

Position: Software Developer, Scaling City Institutions for India: Water and Sanitation (SCI-FI)

1. About the Organization

The **Centre for Policy Research (CPR)** has been one of India's leading public policy think tanks since 1973. The Centre is a non-profit, independent institution dedicated to conducting research that contributes to a more robust public discourse about the structures and processes that shape life in India.

The **Scaling City Institutions for India (SCI-FI)** programme aims to better understand the 'governance scale' in Indian cities in tandem with 'sector-specific socioeconomic scales'. Through research, the programme aims to inform stakeholders, including the three tiers of the government, to develop better-informed policies and programmes enabling improved governance and service delivery. It has two key thematic foci in areas of Land, Planning, and Housing and Water and Sanitation. The SCI-FI programme has been nested at CPR since 2013.

The **Land, Planning and Housing (LPH) initiative** under the SCI-FI programme aims to deepen the understanding of the interrelated governance and sector-specific challenges in the land, planning and housing in urban areas in India. The SCI-FI: LPH initiative envisages to inform multiple stakeholders, including the three tiers of the government, on demand-driven, sustainable, alternative, and scalable models for delivering and operationalising housing, basic services, and property rights for the urban poor.

The **Water and Sanitation initiative** under the SCI-FI programme seeks to understand diverse reasons for poor water and sanitation and to examine how these might be related to technology, service delivery models, questions of institutions, governance, finance, planning, and tenure security, along with other socioeconomic dimensions. The SCI-FI: Water and Sanitation initiative seeks to support national, state, and city authorities to develop policies and programmes for intervention with the goal of increasing access to safe and sustainable sanitation in both urban and rural areas.

2. Background

India's governance systems are witnessing a digital transformation spurred by the national espousal of GovTech through initiatives such as the Smart Cities Mission, the National Urban Innovation Stack, and the National Strategy for National Open Digital Ecosystems (NODE). Moreover, governments have begun to increasingly recognise the importance of geospatial data and analytics in planning sustainable futures at different spatial and temporal scales. The mainstreaming is manifested in the recent liberalisation of India's policy on geospatial data and guidelines on utilising geospatial data for Master Plan development. Geospatial data and analytics help lift the veil on and visualise the morphologies of spatial development and the inequities in access to services, security, and resilience that these produce. By doing so, they can aid city managers, planners, communities, and practitioners in decision-making to achieve liveable, resilient, and equitable habitations.

Buoyed by the global movement towards Free and Open Source Software (FOSS), open-source spatial planning tools like ur-scape (Future Cities Laboratory and Singapore-ETH Centre) and Open City Toolkit (CityScienceLab at HafenCity University) are enabling the collation and analysis of varying types of geospatial data to inform questions of planning and policy in diverse developmental contexts. SCI-FI, CPR is collaborating with different stakeholders, including the creators of these tools, local, regional, and state governments, and communities to test out new and pertinent use-cases for digital-first spatial planning and

decision-making. The organisation is looking to hire an expert at coding/scripting to develop new enhancements, modules, and customisations to the tools to support policy and programme implementation related to Water and Sanitation and Land, Planning and Housing.

3. Qualifications and Skills

Required

- University Degree in Computer Science, Information Technology, or allied fields
- Experience in developing applications using JavaScript
- Experience writing SQL commands/scripts for managing databases and retrieving data from it
- 0-3 years of relevant work experience (including internships and coursework projects) demonstrating basic proficiency in programming and testing

Desirable

- Familiarity with Linux systems and BASH scripting
- Familiarity with C#, Python, Unity Development Engine, or MapBox/Geoserver
- Familiarity with concepts related to geospatial data and open-source GIS applications like QGIS and Grass GIS
- Familiarity with code versioning systems like git
- Willingness to learn and apply new software skills and technology

4. Role and Responsibilities

- Developing enhancements and customisations for GIS-based applications like cityapp and/or ur-scape in collaboration with SCI-FI researchers
- Developing data-centered analytics systems and applications (using geospatial data at the backend) to support planning, implementation, and monitoring of public programmes and service delivery
- Reviewing and applying best practices, policies, and standards related to Free and Open-Source Systems (FOSS) to inform application development and maintenance
- Supporting the development of related user manuals and training materials
- Owning responsibility for all stages of the application development lifecycle, including writing and maintaining codes and testing of application
- Supporting senior researchers at SCI-FI with the overall delivery of projects and providing support for internal and external engagements like consultation meetings, seminars, workshops, etc.

5. Duration of the Contract

The contract will be valid for one year from the time of signing.

6. Selection Criteria

We are committed to promoting diversity and equality of opportunity for qualified candidates regardless of gender, religion, and socioeconomic background. If you are a committed and creative professional passionate about leveraging novel technologies and digital tools for making India's cities, towns, and villages clean and healthy, we look forward to receiving your application.

7. How to Apply

Kindly send an email with your updated CV, a one-page cover letter (explaining how you meet the above-mentioned qualifications and your motivations to apply for this job), and a portfolio of your work to **sci-fi@cprindia.org** by **October 31, 2021, with the subject line “Software Developer_[Your Name]”**. We will only contact shortlisted candidates for further consideration. Salary will be commensurate with experience and qualification and will not be a constraint for the qualified candidate.