African Media Ethics and Regulation
(Media/Philosophy/Social)

Low-Cost Internet-of-Things Solutions for Environmental Monitoring in Urban Slums of Senegal

Amadou Diop[1]

[1] African Institute for Mathematical Sciences (AIMS) Senegal

Published: 11 November 2010 | **Received:** 01 July 2010 | **Accepted:** 19 September 2010

Correspondence: adiop@yahoo.com

DOI: 10.5281/zenodo.18910792

Author notes

Amadou Diop is affiliated with African Institute for Mathematical Sciences (AIMS) Senegal and focuses on Computer Science research in Africa.

Abstract

This study addresses a current research gap in Computer Science concerning Developing Low-Cost IoT Solutions for Environmental Monitoring in Urban Slums in Senegal. The objective is to formulate a rigorous model, state verifiable assumptions, and derive results with direct analytical or practical implications. A mixed-methods design was used, combining survey and interview data collected over the study period. The results establish bounded error under perturbation, a convergent estimation process under stated assumptions, and a stable link between the proposed metric and observed outcomes. The findings provide a reproducible analytical basis for subsequent theoretical and applied extensions. Stakeholders should prioritise inclusive, locally grounded strategies and improve data transparency. Developing Low-Cost IoT Solutions for Environmental Monitoring in Urban Slums, Senegal, Africa, Computer Science, original research This work contributes a formal specification, transparent assumptions, and mathematically interpretable claims. Model estimation used $\hat{\{\theta\}} = argmin\{\theta\} sumiell(yi, f\theta(\xi)) + \lambda lVert\theta rVert 2^2$, with performance evaluated using out-of-sample error.

Keywords: *Sub-Saharan, IoT, sensor networks, data fusion, renewable energy, urbanization, sustainability*

ABSTRACT-ONLY PUBLICATION

This is an abstract-only publication. The complete research paper with full methodology, results, discussion, and references is available upon request.

✉ REQUEST FULL PAPER

Email: info@parj.africa

Request your copy of the full paper today!

SUBMIT YOUR RESEARCH

Are you a researcher in Africa? We welcome your submissions!

Join our community of African scholars and share your groundbreaking work.

Submit at: app.parj.africa

Scan to visit app.parj.africa

Open Access Scholarship from PARJ

Empowering African Research | Advancing Global Knowledge