unite for children

unicef

TERMS OF REFERENCE (TORs)

OVERVIEW

TITLE	Software Developer, Consultant
LOCATION OF ASSIGNMENT	New York, USA
LANGUAGE(S) REQUIRED	English, knowledge of another official UN language is an asset
TRAVEL	Minimal travel anticipated
DURATION OF CONTRACT	11.5 months
SECTION & UNIT	Office of Innovation
CONSULTANT REPORTING TO	Senior Advisor, Innovation

RATIONALE

Want to use your coding skills to do good in this world? Good, we want to talk to you.

UNICEF Innovation is looking for a top-notch developer to create products that solve problems in the developing world. We're open source and agile. We use node, firebase, polymer, and react now, but you'll choose your own stack when prototyping from scratch.

You'll work with a group of entrepreneurs, developers, research scientists and designers on a wide variety of projects. For example: we have a platform, in development with volunteer engineers from Google, that process data from different sources (weather, socioeconomic, travel patterns) in order to forecast the spread of infectious diseases and visualize potential outbreaks: github.com/unicef/majicbox

What else will you do while you're with us? A lot… You'll research emerging technologies like blockchain and smart contracts, then prototype potential solutions for identity, cash remittance, and decentralized autonomous organizations.

You'll write code that impacts the delivery of critical messages to people in need.

Where will you do all this? Alongside an awesome team of about 25 people based at UNICEF HQ in Manhattan, New York, where you'll have access to networks of professionals and academics who pioneer technology.

BACKGROUND

The UNICEF Innovation Unit functions like a collection of startups in early-stage. Promising new technologies (data science, SMS technologies, UAVs) are identified that have potential to impact UNICEF core operations (education, health, disaster response). Through our network of technology companies, UNICEF country offices and academic institutions, we construct pilots to quickly determine if projects should be continued or discontinued. Innovation Unit New York provides support to innovation leads in X country offices and consists of a flat team of technologists, designers, programmers, researchers and communication specialists. Requests for collaboration, advice and support are fielded from UNICEF programmes, other parts of the UN system and the humanitarian technology ecosystem. We also have a small venture fund - the UNICEF Innovation Fund - which provides resources to quickly assess, fund and scale companies, teams, and ideas that have been developed in new and emerging markets. The Innovation Fund supports the generation of open source, public goods that address the most pressing challenges facing children.

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PURPOSE OF CONSULTANCY

To research emerging technologies, suggest problems they can solve in the developing world, and then prototype the solutions.

You will contribute to the development and maintenance of open source software projects and systems that support country offices, while staying current with the latest technologies; plying them according to best practices.

You will expand the UNICEF Innovation github repository with open source applications that demonstrate the work of the data science team while iteratively prototyping with the UI/UX team.

Ongoing Projects That the Candidate Will Be Expected To Support:

- **MagicBox** : A platform to process big data from different sources to be used for humanitarian needs.
- **The Innovation Fund Site**: A realtime illustration of investments of donor money toward open source technologies for children.
- **Blockchain:** Research, consulting and prototyping applications for humanitarian purposes.
- **IOGT** & **uReport** Dashboards: A collection of web components that:
  - Visualize the effectiveness of messaging through twitter, Rapidpro, and the Internet of Good Things network.
  - Summarize trends in interest and technology per country.

DUTY STATION

New York, NY

TIMEFRAME

DELIVERABLES	Deadline
• Get up to speed on existing projects and technologies used, then submit tentative work plan (1-3 pages) to Innovation Unit co-leads and Research Scientist. • Integration to existing groups and participation to development work ongoing.	End of Month 1
• Magic Box v0.7: software architecture design. • Innovation Fund site: Add interactive web components to sections as programs submit new data sources	End of Month 2
• Magic Box v0.7: Integrate new data sources. • Build a blockchain prototype for distributed non sovereign id (v 0.1).	End of Month 3
• Magic Box v0.75: Add features, tests, and refactor. • Innovation Fund website: Develop visualization of varying qualitative and quantitative data while working closely with the Interaction team.	End of Month 4
• Build prototype of CDR/unconventional data system • Magic Box v0.75: Integrate new data sources. • Add web components to IOGT and Ureport as required.	End of Month 5

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• Innovation Fund site: Develop new requirements as they emerge, following agile methodology • Magic Box v0.8: Add features and new requirements as they emerge, following agile methodology. • Build a blockchain prototype for cash remittance (v 0.1).	End of Month 6
• Magic Box v0.8: Add features and new requirements as they emerge, following agile methodology. • Add web components to IOGT and Ureport as required.	End of Month 7
• Innovation Fund site: Develop new requirements as they emerge, following agile methodology • Magic Box v0.8: Add features and new requirements as they emerge, following agile methodology.	End of Month 8
• Magic Box v0.85: Add features and new requirements as they emerge, following agile methodology. • Add web components to IOGT and Ureport as required • Build smart contract prototype (v 0.1)	End of Month 9
• Magic Box v0.85: Add features and new requirements as they emerge, following agile methodology. • Innovation Fund site: Develop new requirements as they emerge, following agile methodology	End of Month 10
• Magic Box v0.9: Add features and new requirements as they emerge, following agile methodology. • Build smart contract prototype (v 0.2)	End of Month 11
• Submit handover report (5-8 pages) summarizing experiences and lessons learned during the contract	End of Month 11.5
• Facilitate and participate in weekly meetings with internal and external stakeholders, including UNICEF country offices • Provide support to other Innovation Unit development needs that might arise throughout the contract period.	Monthly
TOTAL	11. 5 months

KEY COMPETENCES, TECHNICAL BACKGROUND, AND EXPERIENCE REQUIRED

The applicant must hold a Bachelor's degree and/or Master's degree and 3-5 years of professional experience in a relevant field.

Experience or knowledge in the following areas is desired:

- High volume data streams
- System integration: interface design, API development.
- Experience with some of the following technologies:
    - Processing: Hadoop based technologies e.g. Spark
    - Database systems: Mongo, SQL, HDFS. Experience with relational and NoSQL databases
    - Cloud hosting: necessary: Azure, good-to-have: Amazon Web Services

- Architecture: parallelization, distributed systems design
- At least one modern object-oriented programming language, especially Ruby or Python
- Deploying and maintaining software remotely on a Linux or UNIX-like server

- Expertise with some of the following: node.js, firebase, react.js, d3, mongodb, polymer, mocha, phantom.js, python, ruby, rails, mongodb, and heroku.
- Knowledge of environment in which UNICEF operates, and understanding the constraints of working in a developing-world environment. This should include experience developing low-bandwidth applications in challenging work environments.
- Ability to align technical goals with UNICEF strategic goals — that always will mean UNICEF's mission over any particular technology
- Willingness to travel (sometimes on short notice) and develop software in the field, directly with end-users
- Fluency in written and verbal English is a must; competence in at least one other UN language is preferred
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Languages:

Fluency in English. Knowledge of another official UN language is an asset.

HOW TO APPLY

Interested and suitable candidates are requested to send their applications with Subject "**Software Developer, Consultant**" to: jobsugic@gmail.com on or before 10 August 2016.
Applications must include the following:

- Cover letter
- P11 (http://www.unicef.org/about/employ/files/P11.doc)
- CV
- expected monthly rate (total / all-inclusive rate)

Incomplete applications will be disqualified. Applicants must clearly indicate the position applied for and use this order to name file attachments: Firstname_Lastname followed by document e.g. Gold_Mukasa_CV or Gold_Mukasa_CoverLetter. Only short listed candidates will be contacted.

Visit us at www.unicefstories.org and www.unicef.org/innovation

UNICEF is committed to achieving workforce diversity in terms of gender, nationality and culture. Individuals from minority groups, indigenous groups and persons with disabilities are equally encouraged to apply. All applications will be treated with the strictest confidence.