Postdoctoral Fellowship in CoE for 5G4SDG

Sentech, the South African telecommunication infrastructure provider, has provided seed funding to the Department of Electrical Engineering at UCT to start a Center of Excellence to work on innovations around the use of 5G in projects aligned to sustainable development goals (SDGs). We are looking for two postdoc research scholars starting immediately.

Research focus area

The implementation of 5G comes with a range of challenges. In an Afro-centric context, the challenges aggravate further. With this flavor, we want to expand our work in any of the following research directions. If you have experience in any of these, please feel free to get in touch with us and apply.

1. **5G for Sensing**: Ubiquitous existence of 5G will also provide RF scattered signal from the environment in a wide bandwidth. [Channel impulse response (CIR) based sensing](#) or [CommSense](#) can be powerful with the advent of 5G.
2. **5G and AI**: AI and 5G are complimentary. There are many promises of AI which will be feasible through 5G and vice versa. We have deep competence in AI, especially brain and bio-inspired AI. We want to expand our work in both these sub-directions. We would also be keen on the use of blockchain in enabling 5G.
3. **5G and IoT**: Design of sensor networks for SDG oriented applications is another deep competence of the department. We are well established in work around sensing in marine environments. We want to expand this area where we will investigate the use of 5G as a dynamic comms-infrastructure for sensors working in difficult environments (be it wilderness or rural Africa).
4. **5G and Digital Health**: Design and development of secure and intelligent 5G digital health test bed infrastructure for evaluating and validating Telemedicine and mHealth applications
5. **5G Infrastructure**: In this direction, we want to establish 5G infrastructure using developments done in-house. If you have hardware and SDR related expertise, we will be very keen in you!

Value and Tenure:

The value of the fellowship is in the range of R330 000 to R350 000 per annum and is a full-time position, based in Cape Town, for an initial period of one year, with a possible extension to two years. No relocation expenses are available. The fellowship carries no benefits and a directive for tax exemption will be applied for by UCT on behalf of the successful candidate. Which means that this amount is tax-free. Please note that the exact benefit would depend on the candidates' profiles and their performance during the selection process.

During the tenure of the Fellowship, the fellow will be directly responsible to principal investigator A/Prof Joyce Mwangama and other staff members of the centre. As a postdoctoral research fellow in the department of Electrical Engineering at the University of Cape Town, the fellow is also responsible to the Head of Department and to the Dean of EBE.

Conditions and Eligibility:

Both South African and foreign candidates are eligible. Applicants must have completed their doctoral study in the last five years.

- ☐ The applicant will be expected to have an outstanding educational profile in telecommunication or related discipline.
- ☐ The applicants should have good experience in independent research and publication in high impact journal papers.
- ☐ The successful candidate will be expected to publish two to three journal publications in high-impact journals per year during the fellowship tenure.
- ☐ The successful candidate will be required to enter into a Memorandum of Agreement with the University of Cape Town and a Memorandum of Understanding with his/her Principal Investigator.
- ☐ Postdoctoral research fellowships are only available to individuals who have achieved the doctoral degree within the past 5 years.
- ☐ Applicants may not previously have held full-time permanent professional or academic posts.

Application requirements:

Applications must include the following:

- A covering letter explaining the candidate's suitability and experience, as well as his/her availability.
- The applicant's full curriculum vitae and a full list of publications.
- Applicant's Github page.
- The names and contact details of at least two academics who have taught, supervised or worked alongside the applicant.
- Certified copies of all academic transcripts (undergraduate, Honours (if (applicable), Masters (if applicable) and PhD).

All applicants are subject to the policies, procedures and rules according to the postdoctoral sector at the University of Cape Town.

Application deadline

The official call is open and CLOSES on 30th June 2024. Potential candidates are encouraged to contact A/Prof. Joyce Mwangama (joyce.mwangama@uct.ac.za) for project-related queries. Candidates are advised to apply for the position by emailing Ms Nicole Moodley (nicole.moodley@uct.ac.za) their CV, academic transcript, GitHub-link and a research proposal.

The University of Cape Town reserves the right to make no awards at all, to cancel the award if the conditions are not met, and to effect changes to the conditions of the award. The University of Cape town reserves the right to disqualify ineligible, incomplete and/or inappropriate applications.

APPROVED

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