



Birla Institute of Technology & Science, Pilani

Pilani Campus

CALL FOR JUNIOR RESEARCH FELLOW FOR A DST-SERB PROJECT

Date: 17 January, 2020

Applications are invited from suitable candidates for Junior **Research Fellow (JRF)** to work on the following project sponsored by **DST-SERB (SRG/2019/002345)**, under the supervision of **Dr. Syed Mohammad Zafaruddin**, Department of Electrical and Electronics Engineering, BITS-Pilani, Pilani Campus, Rajasthan. The details are as follows.

- Title of the project:** Machine Learning Techniques for Resource Allocation in Cell-Free Massive MIMO Communications
- Project Investigator:** Dr. Syed Mohammad Zafaruddin.
- Project Description:** Massive MIMO is an exciting area in wireless communications research that provides higher data rate with energy efficient transmissions. In the massive MIMO systems, the users are coherently served in the same time-frequency resources by receiving very directive signals through precoding at the base station in typical cellular architectures. However, cellular topology suffers from scalability issues and higher interference for the users at the cell edge. Recently, distributed cell-free architecture has gained research interest to deal with the scalability issue in the cellular topology and to provide fairness for the cell edge users. Optimal allocation of radio resources is one of the fundamental challenges for design and operation of many wireless networks. In this context, the development of machine learning techniques for resource allocation for distributed cell-free massive MIMO networks is highly desirable. We expect that the outcome of the proposed study will contribute to the research area of machine learning in wireless communication systems. Further, the proposed study will be a step to understand the implication of machine learning in resource allocation problems. We envision that the proposed study will find applications in practical wireless transmissions for 5G networks and beyond.
- Project Duration:** 2 years
- Project position:** Junior Research Fellow
- Fellowship amount:** Rs. 31,000/-per month (as per SERB and Institute Guidelines)
- Eligibility:** M.E./M.Tech with at least 60% marks in Electronics and Communication Engineering/Communication Engineering/ Signal Processing/ or relevant area.
- Desirable Qualifications:** GATE/UGC-NET qualifications
- Application Deadline:** 31/01/2020
- Tentative Interview Date:** 03/02/2020.
- Application Procedure:**

- Interested candidates with the above mentioned qualification can send their current resume (C.V.) and a cover letter with detailed information about the educational qualifications and research experience by **31/01/2020 (last date)**, to the Principal Investigator, S. M. Zafaruddin via email: syed.zafaruddin@pilani.bits-pilani.ac.in.
- Please note that only qualified and suitable candidates will be called for interview (shortlisted candidates will be informed through email) to be held at the Department of Electrical and Electronics Engineering, BITS-Pilani, Pilani Campus. No TA/DA will be paid for the interview.
- Selected candidate may be permitted to register for Ph. D. program of BITS, Pilani, subject to the fulfillment of the requirements.

Syed Mohammad Zafaruddin (PI)
Assistant Professor

