Subject: Re: points to be verified regarding MTP and seminar.
From: Kumar Appaiah <akumar@ee.iitb.ac.in>
Date: 19/08/19, 5:57 PM
To: M Arun kumar <173079004@iitb.ac.in>
CC: pg.verifyresume2019iitb@gmail.com

Verified.

On Mon, 19 Aug, 2019, 17:22 M Arun kumar, <173079004@iitb.ac.in> wrote:

> Dear Sir,
>
> Please verify the following for my resume.
>
> **M.Tech Project: An efficient channel estimation scheme in MIMO TDD systems (May'19 - Present)**
> Guide: Prof. Kumar Appaiah, Electrical Engineering, IIT Bombay
>
> **Objective**:
>
> To design an efficient channel estimation scheme in Time Division Duplexing (TDD) with the help of feedback in MIMO Communication which will reduce the effect of pilot contamination on MIMO channel estimation.
>
> **Completed work:**
>
> - Implemented Multi Cell MMSE based MIMO precoding in multiple antenna cellular
> - systems which used non-orthogonal pilots for channel estimation.
> - Analyzed and implemented co-variance based channel estimation which uses Bayesian estimation in single
> - cell multi antenna system and observed its performance based on rate vs number of antennas.
> - Implemented Kalman estimation for multi antenna cellular system.
> - Parameterized the feedback for postcoder in massive MIMO TDD systems with multi antenna users.
> - Formulated a lower bound on the achievable rate for systems with perfect CSIT and partial CSIR.
>
> **Ongoing work:**
>
> Working on implementing a basic precoder which utilises the information obtained from Kalman
> estimate in coordinated MIMO systems.
>
> **M.Tech Seminar: Inter cell interference in Multi Cell MIMO systems (Jul'18 - Nov'18)**
> **Guide**: Prof. Kumar Appaiah, Electrical Engineering, IIT Bombay

- Studied the structure and working of MIMO systems and impact on BER on using Non-orthogonal pilot sequences for channel estimate.
- Simulated BER vs SNR for MIMO systems in Interference and Interference-free scenarios to study the impact of pilot contamination on the performance of the system.

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Thanks and regards
M.Arun Kumar,
M.Tech,
IITB.
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