Ameya Anjarlekar

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Education

- **Indian Institute of Technology Bombay** — Mumbai, India
  Bachelor of Technology in Electrical Engineering and Minor in Computer Science ; ***CPI: 9.57/10*** *(2017-2021)*

Publications

- Generalized Fractional Ambiguity Function and Its Applications
  Peeyush Sahay, Izaz Ahamed Shaik Rasheed, Pranav Kulkarni, Shubham Anand Jain, **Ameya Anjarlekar**, P. Radhakrishna Vikram M. G Circuits, Systems, and Signal Processing, Springer.
- Generalized Fractional Matched Filtering and its Applications
  P. Sahay, **A. Anjarlekar**, S. A. Jain, P. Radhakrishna and V. M. Gadre, Generalized Fractional Matched Filtering and its Applications, 2020 National Conference on Communications (NCC), Kharagpur, India, 2020, pp. 1-6.

Research and Technical Projects

- **Generalized Time-Frequency Transform in Radar** — IIT Bombay
  Guide: Prof. V.M. Gadre, Mr. Peeyush Sahay(DRDO) *(April 2019 - May 2020)*
  - Proposed **Generalized Frequency Ambiguity Function** and derived relevant properties. It was further applied for the parameter estimation of cubic chirp signals
  - Proposed envelope correlation using double chirp technique through which object parameters like acceleration, velocity and position of the object can be more accurately found out using Generalized Time-Frequency Transform
  - Proposed Adaptive Generalised Fractional Spectrogram for analysing multicomponent frequency modulated signal
- **Supervised Detection of Tennis Ball from Camera Stream [Doc][Code]** — IIT-B Mars Rover Team
  University Rover Competition(URC 2019) *(Aug 2018 - Dec 2019)*
  - Working towards the ball detection sub-task required for target detection in autonomous operations of the rover
  - Created a dataset comprising of over 80,000 examples and further refined using **Data Augmentation** procedures
  - Each test image was pre-processed using **circular hough transform** to extract features regarding shape
  - Devised a model algorithm for the task which comprises of using **transfer learning** by initially training on a tennis match dataset and then transferring the trained weights to re-train on the generated dataset
- **Image Reconstruction for Parallel MRI [Doc][Code]** — IIT Bombay
  Guide: Prof. V.M. Gadre *(September 2018 - June 2019)*
  - Implemented a modified version of the GRAPPA algorithm on **SDK** for image reconstruction during **Parallel MRI** technology which would be used in the indigenous state of the art MRI machine developed at IIT Bombay
  - Estimated the dependancy of neighbouring pixels by using a modification of the linear least fit method
  - Tested the algorithm on Matlab and then implemented on Xilinx Zynq-7000 FPGA Board

Scholastic Achievements

- Received **IRCC Award** for excellent R&D work in Radar Signal Processing [2019]
- Awarded **Undergraduate Research Award** (URA) by IIT Bombay for contribution to development of MRI [2019]
- Shortlisted as one of the Top 34 teams in the **Mercedes-Benz Digital Challenge, India**. [2019]
- Secured an **AP** grade (awarded to less than 1% students) in course on differential equations (MA 207) [2018]
- Secured an All-India Rank **132** in **JEE-Advanced** and an All-India Rank **215** in **JEE-Main** [2017]
- Awarded fellowship by the Indian Institute of Science (IISC), Bangalore for securing an All-India Rank of **243** in **KVPY** (Kishore Vaigyanik Protsahan Yojana) out of around 80,000 students [2017]
- Placed among the top 500 students of the nation to be selected for the **Indian National Maths Olympiad** [2015]

Link to my extended CV:
http://ameyanjarlekar.github.io/files/3pg.pdf