

# KEDAR KULKARNI

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## Research Interests

Cognitive radio, Cooperative networks, Energy harvesting, Green communication, Queueing theory, Markov decision process

## Education

Year	Degree	Institute	CPI
2010-Present	Ph.D., Electrical Engineering	Indian Institute of Technology Kanpur	8.55 / 10
2006-10	B.Tech., Electronics & Telecommunications	College of Engineering Pune	8.96 / 10

## Relevant Courses

Wireless Communications	Digital Communication Networks
Information Theory and Coding	Digital Switching
Communication Theory	Simulation of Communication Systems
Representation and Analysis of Random signals	Detection and Estimation Theory
Introduction to Signal Analysis	Mathematical Methods in Signal Processing
Topics in Cryptography and Coding Theory	

## Research Articles

### Journals (under review)

- K. Kulkarni and A. Banerjee, "On Stable Throughput of Cognitive Radio Networks With Cooperating Secondary Users," IEEE Transactions on Communications, **accepted**.
- K. Kulkarni and A. Banerjee, "On Optimal Spectrum Access of Cognitive Relay With Finite Packet Buffer," Submitted to IEEE Transactions on Vehicular Technology.
- K. Kulkarni and A. Banerjee, "Multi-channel Sensing And Resource Allocation in Energy Constrained Cognitive Radio Networks," Submitted to Elsevier Physical Communication.

### Conferences

- K. Kulkarni and A. Banerjee, "Stable Throughput Tradeoffs in Cognitive Radio Networks With Cooperating Rechargeable Nodes," in Proc. IEEE Wireless Commun. Netw. Conf. (WCNC), New Orleans, LA USA, vol., no., pp.1742-1747, 9-12 March 2015.
- K. Kulkarni and A. Banerjee, "Adaptive Transmission Strategies To Maximize Packet Throughput Of Cognitive Radio Under Primary User Queue Stability Constraint," in Proc. Int. Conf. Signal Process. Commun. (SPCOM), IISc Bangalore, India, vol., no., pp.1-6, 22-25 July 2014.
- K. Kulkarni and A. Banerjee, "Maximizing Sum-Outage Capacity of OFDM-based Cognitive Radio Under Primary User Queue Stability Constraint," in Proc. IEEE Wireless Commun. Netw. Conf. (WCNC), Istanbul, Turkey, vol., no., pp.1-6, 6-9 April 2014.
- K. Kulkarni and A. Banerjee, "Power Allocation for OFDM-based Cognitive Radio Systems Under Average Interference Constraint," in Proc. National Conf. Commun. (NCC), IIT Delhi, India, vol., no., pp.1-5, 15-17 Feb. 2013.

## Teaching Experience

- Course and laboratory tutor for ESC 201: Introduction to Electronics
- Teaching assistant for EE 381: Digital Circuits and Microprocessors Laboratory
- Teaching assistant for EE 320: Principles of Communications

## Others

- Best Teaching Assistant Award for Spring Semester 2014 and Spring Semester 2012 at IIT Kanpur.
- Programming skills: MATLAB, Python, C, Assembly programming for AVR microcontrollers and 8051.
- Student member IEEE and student member IEICE.