

# RUDRAPATNA VALLABH RAMAKANTH

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## RESEARCH INTERESTS

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I am a graduate student researcher in the Laboratory for Information & Decision Systems (LIDS) at MIT. I am broadly interested in communication systems and computer networks, network control, information theory, estimation theory, and signal processing.

## EDUCATION

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**Massachusetts Institute of Technology, Cambridge MA** *Feb 2024 - Present*  
PhD Student – Communication Networks  
Dept. of Aeronautical and Astronautical Engineering  
**Advisor:** Prof. Eytan Modiano

**Massachusetts Institute of Technology, Cambridge MA** *Sep 2022 - Feb 2024*  
SM in Communication Networks  
Dept. of Aeronautical and Astronautical Engineering  
**Thesis Title:** Wireless Scheduling for Monitoring Remote Correlated Sources  
**Advisor:** Prof. Eytan Modiano  
**GPA:** 5.0/5.0

**Indian Institute of Technology Madras, Chennai** *Aug 2017 - May 2022*  
MTech and BTech in Electrical Engineering (*with Honours*)  
**Thesis Title:** Blind Estimation of Communication Link Parameters and Signal Separation of Co-Frequency Signals in Wireless Communication.  
**Advisors:** Prof. Devendra Jalihal and Prof. RK Ganti  
**GPA:** 9.52/10.0

## PROFESSIONAL EXPERIENCE

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**Qualcomm** *June 2021 - August 2021*  
*Interim Engineering Intern* *Hyderabad, India*

- Developed methods for carrier frequency offset (CFO) tracking and designing trackers meeting transient specifications of tracker in the context of 5G.

**Texas Instruments** *May 2020 - July 2020*  
*Digital Engineering Intern* *Bengaluru, India*

- Developed an automatic and efficient way to compute latencies and bandwidth of large transactions on RADAR Systems-on-Chip (SoCs) over the network of buses.

**Tejas Networks** *May 2019 - July 2019*  
*Digital Engineering Intern* *Bengaluru, India*

- Researched redundancies of OFDM in the context of 4G/LTE and formulated methods to improve data compression alongside the development of a web-based tool for profit-margin analysis of products and line items.

## PUBLICATIONS

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1. *Monitoring Correlated Sources: AoI-based Scheduling is Nearly Optimal.*  
**R. V. Ramakanth**, V. Tripathi, E. Modiano, IEEE Transactions on Mobile Computing, 2024
2. *Monitoring Correlated Sources: AoI-based Scheduling is Nearly Optimal.*  
**R. V. Ramakanth**, V. Tripathi, E. Modiano, IEEE INFOCOM, 2024

## COURSEWORK

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<b>Networks and Communication</b>	Data Communication Networks, Wireless Communication Systems, Error Control Coding.
<b>Control Theory</b>	Reinforcement Learning, Dynamic Programming, Stochastic Control, Linear Dynamical Control, Optimization.
<b>Probability and Statistics</b>	Information Theory, Estimation Theory, Stochastic Processes.
<b>Hardware and Circuits</b>	Analog and Digital IC Design, RF IC Design, Phase Locked Loops, Microprocessor Theory.

## TEACHING APPRENTICESHIP EXPERIENCE

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1. Communication Systems and Networks (16.36) *Jan 2025 -*  
Massachusetts Institute of Technology, Cambridge, USA.  
**Instructor:** Prof. E. Modiano
2. Analog Systems and Lab (EE2019) *Jan 2022 - May 2022*  
Indian Institute of Technology Madras, Chennai.  
**Instructor:** Prof. S. Aniruddhan
3. Basic Electrical Engineering (EE1100) *Aug 2021 - Dec 2021*  
Indian Institute of Technology Madras, Chennai.  
**Instructor:** Prof. E. Bhattacharya

## SCHOLARSHIPS

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1. Samsung-IITM Pravartak Fellowship for Dual Degree Project *Mar 2021 - Jul 2021*  
Indian Institute of Technology Madras, Chennai.

## SCHOLASTIC ACHIEVEMENTS

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1. Qualified JEE Advanced (All India Rank 3632) and JEE Main (All India Rank 1445) *Jun 2017*
2. Ranked 3<sup>rd</sup> in state of Karnataka, India in COMED-K examination *May 2017*
3. Ranked 1<sup>st</sup> (among Bangalore Sahodaya Schools) in All India Secondary School Exam *May 2017*
4. Kishore Vaigyanik Protashan Yojana Scholar (All India Rank 963) *Jan 2017*

## CO-CURRICULAR ACHIEVEMENTS AND HONORS

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- Second Place – Flipkart GRiD 2.0 *Aug 2020*
- Gold and Bronze Medal – Inter IIT Tech Meet 2019 *Dec 2019*  
Indian Institute of Technology Roorkee, Roorkee
- Third Place – Tata Makerthon Challenge at Techfest 2018 *Dec 2018*  
Indian Institute of Technology Bombay, Mumbai

## TECHNICAL SKILLS

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**Computer Languages**  
**Frameworks/Libraries**  
**Tools**

C/C++, Python, MATLAB, Java  
NumPy, PyTorch, Android  
LABView, GNURadio, LTSPICE & other circuit simulators