

Sankara Sai Chaithanya, Rayudu

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Education

Jan'21 - Present	Center for Quantum Information and Control (CQI/C) PhD Candidate University of New Mexico Department of Physics and Astronomy	CGPA: 4.06
Aug'14 - May'19	Indian Institute of Technology Madras Dual degree (B.Tech & M.Tech) Major: <i>Electrical Engineering</i> Minor: <i>Physics</i>	CGPA: 8.37/10

Work Experience

July'19 - Dec'20	Software Engineer - <i>Texas Instruments, Bangalore</i> Designed and tested speaker protection and audio enhancement algorithms for micro speakers. Developed firmware for low-power audio amplifiers.
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Publications

1. "An SU(2)-symmetric Semidefinite Programming Hierarchy for Quantum Max Cut" [arxiv:2307.15688](https://arxiv.org/abs/2307.15688)
Jun Takahashi, **Chaithanya Rayudu**, Cunlu Zhou, Robbie King, Kevin Thompson, Ojas Parekh
2. "Quantum Bicyclic Hyperbolic Codes" [Quantum Inf Process 19, 228 \(2020\)](#)
Sankara Sai Chaithanya Rayudu, Pradeep Kiran Sarvepalli

Poster Presentations

June'23	Presented a poster on 'Application of SWAP-operator algebra for anti-ferromagnetic Heisenberg models via semi-definite programming' at Adiabatic Quantum Computing (AQC) - 2023 conference in Albuquerque, New Mexico, USA.
October'22	Presented a poster on 'Transition Network Method for Stoquastic Heisenberg Hamiltonians' at Southwest Quantum Information and Technology (SQInT) - 2022 conference in Berkeley, California, USA.
January'19	Presented a poster on 'Quantum Bicyclic Codes' at Quantum Information Processing (QIP) - 2019 conference in Boulder, Colorado, USA.

Relevant Course Work

- Quantum Mechanics (I,II)
- Quantum Computing and Quantum Information (I,II)
- Quantum Error Correction
- Quantum Field Theory
- Quantum Optics (I, II)
- Error Control Coding
- Modern Coding Theory
- Approximation Algorithms
- Theory of Deep Neural Networks

Teaching Experience

Jan'21 - May'21	Teaching Assistant <i>Course: Algebra-based Physics Lab</i> <i>University of New Mexico</i>
Aug'18 - Dec'18	Teaching Assistant <i>Course: Quantum Computing and Quantum Information</i> <i>Instructor: Dr. Prabha Mandayam</i>

Other Projects and Experiences

June'19	JTG Summer School 2019 - IIT Madras Dr. Michelle Effros (Caltech): Network Information Theory Dr. Praneeth Netrapalli (MSR): Introductory Course on Optimization
July'18	JTG Summer School 2018 - IIT Bombay Dr. Rüdiger Urbanke (EPFL): How physics and computer science helped us build better codes Dr. Ashish Goel (Stanford): Topics in social algorithms.
May'16 - Jan'17	IIT Madras Student Satellite Project <i>Advisors: Dr. David R Koilpillai and Dr. Harishankar Ramachandran</i> Worked as a part of the team responsible for developing the command and data management system for a student satellite. Created schedules of various tasks and communications between different peripherals of satellite in Real Time Operating System to ensure the smooth functioning of the satellite.

Scholastic Achievements

- In the top 0.02 percentile of the one Million applicants of JEE Mains 2014
- Ranked 288 among more than 126,000 applicants of JEE Advanced Exam 2014
- Ranked among the top 300 in the Indian National Physics Olympiad, Indian National Chemistry Olympiad, and Indian National Astronomy Olympiad in 2014.
- A two-year scholarship for high school by Bhashyam Educational Institute on the basis of scholastic merit.