Sankara Sai Chaithanya, Rayudu

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Education

Jan'21 - Present
Center for Quantum Information and Control (CQuIC)
PhD Student
University of New Mexico
Department of Physics and Astronomy

Aug'14 - May'19
Indian Institute of Technology Madras
Dual degree (B.Tech & M.Tech)
Major: *Electrical Engineering*
Minor: *Physics*

Work Experience

July'19 - Dec'20
Software Engineer - *Texas Instruments, Bangalore*
Roles: Designing and testing speaker protection and audio enhancement algorithms for micro speakers. Firmware development for low-power audio amplifiers.

Publications

1. "An SU(2)-symmetric Semidefinite Programming Hierarchy for Quantum Max Cut" arxiv: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

Conferences & 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 (SQuInT) - 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
- Advanced Topics in Networks (Theory of Deep Neural Networks)

Relevant Teaching Experience

Aug'18 - Dec'18
Teaching Assistant
Course: Quantum Computing and Quantum Information [PH5840]
Instructor: Dr. Prabha Mandayam

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**
Advisors: Dr. David R Koilpillai and Dr. Harishankar Ramachandran
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.