

Aravind Reddy Talla

Curriculum Vitae

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Education

- 2014–2018 **B.Tech in Computer Science with minors in Quantum Mechanics**,
Indian Institute of Technology Kanpur, CPI - 8.7/10 (At the end of 6 semesters) .
- 2014 **Higher Secondary School**, *Sri Chaitanya Narayana Junior College, Vijayawada*,
98.0%(State top one percentile).
- 2012 **Secondary School**, *Gowtham Concept School, Hyderabad*, GPA : 9.7/10.

Awards & Scholastic Achievements

- 2017 **Charpak Scholarship for research internship**, *French Government*.
- 2015 **National Initiative on Undergraduate Science Scholarship**, *HBCSE(TIFR)*.
- 2015 **Academic Excellence Award**, *IIT Kanpur*.
- 2014 **Gold Medallist**, *Indian National Physics Olympiad*, National Top 35, Participated
in the selection camp for the Indian team for IPhO 2014.
- 2014 **All India Rank 189 out of 1.4 million applicants**, *Joint Entrance Examination*.

Research Internships

- Summer 2017 **Paris Centre for Quantum Computing**, *Université Paris Diderot, Paris*.
Mentors: *Prof. Eleni Diamanti and Prof. Ioannis Kerenidis* *Ongoing work
Outline: We designed two new protocols for quantum repeater networks for sharing tripartite
entangled states. I analyzed them mathematically and also simulated them using Octave. I
was also extremely fortunate to attend TQC 2017 organised by the Quantum Information
group at Université Pierre et Marie Curie(where I worked for most of my time).
- Summer 2016 **Centre for Quantum Technologies**, *National University of Singapore, Singapore*.
Mentor: *Prof. Hartmut Klauck*
Outline: Studied about complexity theory in general and relations between query and
communication complexities of a subclass of composed functions(related to "Rectangles are
Nonnegative Juntas" by Göös et.al)
- June & **Indian Institute of Science Education and Research**, *Kolkata*.
December Mentor: *Prof. Prasanta K. Panigrahi* Funded by the NIUS Scholarship
2015 Outline: Studied about quantum computing in general and some aspects of quantum
cryptography like QKD protocols and quantum money schemes.

Coursework:

([†])Graduate course, (*)Fall 2017

- Theoretical Quantum Computing[†], Modern Cryptology[†], Computational Complexity^{†*}, Theory
CS of Computation, Discrete Mathematics, Abstract Algebra, Logic for CS, Data
Structures & Algorithms

Other CS	Machine Learning ^{†*} , Computer Networks*, Operating Systems, Compilers, Computer Organisation
Physics	Coherence & Quantum Entanglement ^{†*} , Quantum Mechanics 1*, Quantum Physics
Humanities	Academic Writing*, Philosophical Aesthetics, Introductory Philosophy, Economics
Online courses	Quantum Information Science II[†] (edX certificate), Quantum Cryptography (edX certificate), Human Evolution (edX certificate)

Skills:

Programming	C, C++, Python, Bash, Octave, Git
Others	L ^A T _E X, Hugo, HTML, CSS
Languages	Telugu(native), English, Hindi

Academic Projects at IIT Kanpur

Fall 2016	Quantum Entanglement & Nonlocal Games. Mentor: <i>Prof. Rajat Mittal</i> , Dept. of Computer Science and Engineering Outline: Studied about Nonlocal games and their quantum strategies. Project Report .
Spring 2016	Certified Randomness Generation using Quantum Non-Locality. Course Project for CS682(Quantum Computing) Outline: Studied Quantum Non-Locality and one of it's applications to certified randomness generation. Project Report
Spring 2017	C Compiler , <i>Course project for CS335(Compiler Design)</i> . Developed a compiler for a subset of C to x86 assembly using Python & Plex.
Fall 2016	Extensions for NachOS , <i>Course project for CS330(Operating Systems)</i> . Implemented some system calls, process scheduling algorithms and page replacement algorithms to extend the functionality of NachOS operating system.
Fall 2015	Rotating Bridge , <i>Course project for TA201(Manufacturing Processes I)</i> . Received the 3rd best project award from over 60 groups.
Spring 2016	Rotobot , <i>Course project for TA202(Manufacturing Processes II)</i> . Received the 2nd runner up award from over 60 groups.

Leadership Experience

2016-17 term	Science CoffeeHouse, IIT Kanpur , Coordinator. <ul style="list-style-type: none"> Organised several student talks on intriguing scientific topics. Prepared questions for several events in Takneek, the inter hostel technical competition. Organised a treasure hunt as a part of Takneek.
2016-17 term	Association for Computing Activities, IIT Kanpur , Coordinator. <ul style="list-style-type: none"> Lead the student body of the Computer Science department Conducting several events like informal Faculty-Student interaction sessions, competitive programming events and hackathons. Allocated mentors to freshmen for semester projects guided by senior students.
2016-17 term	Card & Board Games Club, IIT Kanpur , Coordinator. Organised several campus board games meetups and conducted inter hostel competitions in the games Dominion & Carcassonne.

July 2015 - **English Literary Events, Antarāgni, IIT Kanpur**, Coordinator.

Oct 2015 Organised various literary events as a part of the annual institute cultural festival. There were over 300 participants from colleges across the country.

Selected talks

Nov 2016 **Quantum Entanglement & Nonlocal games**, SIGTACS, IITK, [Slides](#) .

Sept 2016 **Introduction to TCS**, *for freshman students*, ACA, CSE IITK.

June 2016 **Rectangles are Nonnegative Juntas**, *CQT CS Talk*, Singapore.

April 2016 **Is it really random?**, Science CoffeeHouse, IITK.

Jan 2016 **Nature and Certification of Randomness**, ACA, [Slides](#) .

Test Scores

December **GRE General Test**.

2016 332/340(perfect 170 in the quant section)

December **TOEFL iBT**.

2016 109/120

Miscellaneous

- Sporadic blogger on my site aravindreddy.org
- Attended TQC2017(Theory of Quantum Computation, Communication and Cryptography)
- Attended the Shannon Centenary day celebrations at IIT Kanpur.
- Secured distinction in initial grade keyboards exam, rock and pop organised by Trinity School of Music, London in December 2015.
- Completed the touch typing course on typing.com. A five minute typing test in February 2017 gave a result of 61WPM with 94% accuracy.