

# Aravind Reddy Talla

## Curriculum Vitae

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### Education

- 2023 **Northwestern University, Evanston, Illinois,**  
(Expected) Ph.D, Computer Science.
- 2018 **Indian Institute of Technology(IIT) Kanpur,**  
B.Tech, Computer Science & Engineering(minor in Physics), Distinction.

### Internship Experience

- Summer 2017 **Paris Centre for Quantum Computing, Université Paris Diderot.**  
Mentors: *Prof. Eleni Diamanti and Prof. Iordanis Kerenidis* Partly funded by Charpak
- Summer 2016 **Centre for Quantum Technologies, National University of Singapore.**  
Mentor: *Prof. Hartmut Klauck*
- June & December 2015 **Indian Institute of Science Education and Research, Kolkata.**  
Mentor: *Prof. Prasanta K. Panigrahi* Funded by the NIUS Scholarship

### 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.**
- 2014 **Ranked 189 out of 120 thousand applicants, JEE Advanced.**
- 2014 **Ranked 206 out of 1.4 million applicants, JEE Main.**

### Teaching Experience

- Winter 2019 **Teaching Assistant, EECS 336(Algorithms), Northwestern University,**  
Held office hours, graded homeworks, and held few of the weekly sections.
- Winter 2018 **Tutor, ESC101: Fundamentals of Computing, IIT Kanpur,**  
Held weekly tutorials, set up exam questions, reviewed exam questions prepared by other tutors, graded exams, typeset the major exams, supervised a few programming lab sessions, and invigilated exams.

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## Selected Coursework:

(†) Ongoing

- Computer Science Approximation Algorithms, Computational Complexity, Computational Learning Theory, Cryptography, Lattices in Computer Science<sup>†</sup>, Linear Programming & Spectral Graph Theory, Machine Learning, Mechanism Design, Quantum Computing
- Other Probability Theory & Stochastic Analysis, Quantum Mechanics, Thermal Physics, Special Relativity, Languages of South Asia, Philosophical Aesthetics
- edX courses [Human Evolution](#)(edX certificate), [Quantum Cryptography](#)(edX certificate), [Quantum Information Science II](#)(edX certificate)

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## Course Projects at IIT Kanpur

- Fall 2016 **Quantum Entanglement & Nonlocal Games.**  
Mentor: *Prof. Rajat Mittal*, Dept. of Computer Science and Engineering  
Outline: Studied about Nonlocal games and their quantum strategies. [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. [Report](#)
- Spring 2017 **Breaking Cryptosystems, Modern Cryptology by Prof. Manindra Agrawal.**  
The 'assignment' in this course was a text adventure game which involved breaking various ciphers to clear a particular level. Over the course of the semester, we broke:  
◦ Substitution cipher ◦ Block substitution cipher ◦ Substitution-Permutation cipher  
◦ DES (with differential cryptanalysis) ◦ SASAS (AES like attack) cipher  
◦ RSA (with low public exponent, using Coppersmith's LLL based attack) ◦ A hash function
- Fall 2017 **Handwritten Mathematical Expression Recognition, Machine Learning.**  
Developed a tool which uses a CNN to convert an image of a handwritten mathematical expression to it's corresponding LaTeX code. [Slides](#), [Report](#)

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## Skills:

- Programming C/C++, Python, Bash, Octave
- Web-Dev HTML, CSS, Hugo, PHP, SQL
- Tools  $\LaTeX$ , Git, GNU Plot
- Natural Languages Telugu(native), English(fluent), Hindi(fluent)

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## Campus Leadership

- 2016-17 term **Science CoffeeHouse.**
- Organised several student talks on interesting scientific topics.
  - Prepared questions for several events and was part of the team which organised a treasure hunt in Takneek, the inter hostel technical competition.
- 2016-17 term **Association for Computing Activities.**
- Led the student body of the CSE department and organised several events like informal Faculty-Student interaction sessions, programming competitions and hackathons.
  - Allocated senior student mentors to freshmen for guided semester projects.

2016-17 term **Card & Board Games Club.**

Organised several board game meetups and conducted inter hall(student residence) competitions in Dominion and Carcassonne.

July 2015 - **English Literary Events, Antarāgni.**

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

## Miscellaneous

- Awarded STOC 2019 Student Travel grant.
- Attended Midwest Theory Day 2019, Purdue University.
- Attended ALT 2019, Chicago.
- Volunteer for FSTTCS 2017, Kanpur, India.
- Attended TQC2017, Paris, France.
- Attended Shannon Centenary celebrations, IIT Kanpur.
- Awarded distinction in initial grade keyboards exam, rock and pop organised by Trinity School of Music, London in December 2015.