

Aravind Reddy Talla

Curriculum Vitae

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📄 aravindreddy.org

Education

- 2023 **Northwestern University, Evanston, Illinois,**
(Expected) PhD, Computer Science.
- 2018 **Indian Institute of Technology Kanpur, Kanpur, UP,**
B.Tech, Computer Science Engineering (Minor in Physics), CPI - 8.6/10(Distinction).
- 2014 **Sri Chaitanya Narayana Junior College, Vijayawada, AP,**
98.0% (\approx 99.9 percentile) in Intermediate exams conducted by BIE, AP.
- 2012 **Dr. K.K.R's Gowtham Concept School, Hyderabad, Telangana,**
GPA - 9.7/10 in the SSC examinations conducted by BSC, AP.

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

- Jan - April 2018 **Tutor for ESC101: Fundamentals of Computing, IIT Kanpur,**
Took weekly tutorials and set up some of the course exams.

Selected Coursework:

- CS Theory Computational Complexity, Quantum Computing, Modern Cryptology, Approximation Algorithms, Linear Algebraic Tools for TCS
- Other Machine Learning, Quantum Mechanics, Thermal Physics, Special Relativity, Languages of South Asia, Philosophical Aesthetics
- edX courses [Quantum Cryptography](#)(edX certificate), [Human Evolution](#)(edX certificate), [Quantum Information Science II](#)(edX certificate)

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](#)
- Spring 2017 **C Compiler, Course project for CS335(Compiler Design).**
Developed a compiler for a subset of C to x86 assembly using Python & Plex.
- Fall 2016 **Extensions for NachOS, Course project for CS330(Operating Systems).**
Implemented some system calls, process scheduling algorithms and page replacement algorithms to extend the functionality of NachOS operating system.

Skills:

- Programming C/C++, Python, Bash, Octave, Julia, Racket, Verilog, x86 Assembly
- Web-Dev HTML, CSS, Hugo, PHP, SQL
- Tools L^AT_EX, Git, GNU Plot, Jupyter, Xfig, Wireshark
- Languages Telugu(native), English(fluent), Hindi(fluent)

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

- Volunteer for FSTTCS 2017, IIT Kanpur
- Attended TQC2017, LIP6, UPMC
- 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.