

Abraham K. Ladha

Georgia Institute of Technology
Mathematics with Computer Science focus
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Education

Georgia Institute of Technology — Fall 2016 - Present

B.S. in Discrete Mathematics expected Spring 2018.

Fields: Graph Theory, Cryptography, Abstract Computer Science

Armstrong State University — Fall 2014 - Spring 2016

transferred to Georgia Tech after two years.

GPA 3.78/4.0

H. V. Jenkins High School Fall — 2010 - Spring 2014

Engineering Academy

Graduated AP Scholar with Distinction

Research

Provable Security and Ethereum — Fall 2016

Worked to implement Ethereum's CASPER protocol as to fit Andrew Miller's Provable Security foundation. Final project for CS6260.

The Ethereum Scratch Off Puzzle — arxiv.org/abs/1612.04518

Secure Multiparty Computation — Summer 2016 - Fall 2016

Worked with Dr. Rasheed to implement a secure hamming distance protocol as a comparator for a secure set intersection protocol

Summary of research — ladha.me/files/writeup.pdf

Topological Graph Theory - Spring 2016

Worked with Dr. Lambert to find upper and lower bounds

For the crossing number of the Paley graph on 13 vertices

The N-Queens problem - Summer 2014 - Spring 2015

Worked with Dr. Brown to find classes of permutations of a variation of the traditional n -queens problem.

Exploring mod 2 n -queens games — arxiv.org/abs/1510.02875

Awards

Lancy C. Jen Shearhouse Scholarship

Armstrong State University, 2016

GA Power Research Scholar

Armstrong State University, 2016

Eagle Undergraduate Mathematics Conference 3rd Place
Georgia Southern University, 2016

ACM International Collegiate Programming Competition
College of Charleston, 4th regionals, 2016

Video Game Design State of Georgia
9th place 2012, 6th place 2013, 3rd place 2014

Work

CEISMIC STEAM Camp Counselor — Summer 2013 - Present
I taught mostly K-5 girl scouts basics of computers and programming using tools such as Gdevelop, Construct, Code.org, and Unity3D.

Student Worker — Summer 2015 - Spring 2016
I helped manage various CS Lab equipment, including desktops, 3D printers, plotters, and haptic input devices.

Programming Competition coordinator — Spring 2016
I organized meetings to help Armstrong's programming team practice for events, such as the ACM ICPC and regional programming competitions

ACM Student Chapter President Fall 2015 - Spring 2016
I oversaw the second largest organization on campus and helped plan and manage several large events through out the year.

Technology Student Association President Fall 2013 - Spring 2014
I grew our organization from 12 people to 80. Our school was promoted to nationals during my term for the first time since 1988.

Notable Coursework

Georgia Tech

CS 6260 Applied Cryptography
CS 4510 Automata and Complexity
MATH 4441 Differential Geometry
MATH 4107 Abstract Algebra
MATH 4107 Complex Analysis
MATH 4107 Real Analysis
MATH 4510 Automata and Complexity
MATH 4782 Quantum Computing
MATH 4280 Information Theory
MATH 4032 Combinatorial Analysis
MATH 4150 Number Theory

Armstrong

MATH 5160 Theory of Numbers

MATH 4900 Special Topics Topological Graph Theory
MATH 4340 Graph Theory
MATH 4022 Advanced Calculus II
MATH 4011 Advanced Calculus I
MATH 3360 Modern Geometry (Note: actually was Classical Geometry)
MATH 3110 Abstract Algebra
PHYS 3200 Mathematical Methods for Physicists
CSCI 5825 Artificial Intelligence
CSCI 5700 Computer Security
CSCI 3510 Theory of Computation
CSCI 3330 Comparative Languages
CSCI 3301 UNIX and secure web development

Skills

Fluent programming skills in C, Java, Go, Python, Javascript and many others
Experience with Linux (Arch, Fedora, Debian) and full stack (LAMP, etc)
I have repos at github.com/abrahimladha and git.ladha.me
I enjoy yo-yos and various puzzle cubes.
I also like programming and math competitively,
such as the Putnam and the Halite competitions.