ABISHRANT **PANDAY**

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EDUCATION

HARVARD UNIVERSITY
Cambridge, MA
Aug 2018 - Present

JOINT A.B. CANDIDATE IN MATHEMATICS AND PHYSICS, PROSPECTIVE MASTER'S CANDIDATE IN CS
Coursework Fall Semester: Math 55A: Studies in Algebra and Group Theory, Physics 16: Mechanics and Special Relativity, CB 32: Madness & Medicine, Expos 20: Writing Seminar
Spring Semester: Math 55B: Studies in Real and Complex Analysis, Math 129: Number Fields, Computer Science 124: Data Structures and algorithms, Physics 153: Electrodynamics

HUNTER COLLEGE HIGH SCHOOL
New York, NY
Jun 2018

GPA: 4.0/4.0 (UNWEIGHTED)
Relevant Coursework AP BC Calculus, AP Chemistry, AP Physics: Mechanics and Electricity & Magnetism, Organic Chemistry, Micro/Macro Economics, AP Computer Science A
Extracurricular Activities Science Olympiad (Founder and Captain), *The Leading Strand* (Editor-in-cheif), Science Bowl (Captain), Math Team (Captain), *The Observer* (Staff Writer), I-Help Liberia (President)
Awards High School National Championship Tournament (1st place), Scholastic Art & Writing Awards (National Silver Medal, 5x Regional Gold), 2017 Siemens Competition Semifinalist, NYC Science & Engineering Fair (2nd place in CS), Moody's Mega Math Challenge (Top 78/1121 Papers), 2x AIME
Hunter College (Dual Enrollment) GPA 4.0/4.0, Calculus III with Analytic Geometry, Vector Analysis, Linear Algebra, Differential Equations

EXPERIENCE

LABORATORY OF NANOSCALE OPTICS
Harvard University
Jan 2019 - Present

QUANTUM OPTICS MODELING AND FABRICATION RESEARCHER
- Working in the laboratory of Dr. Marko Loncar
- Researching SiV centers in diamond nanocavities as a method of developing multi-node quantum networks
- Creating a computational model of SiV centers in order to study the effects of mechanical and thermal stress on resonant frequency at high temperatures.

THE GARCIA CENTER
Stony Brook University
Jun - Sep 2017

MATERIALS SCIENCE AND ENGINEERING RESEARCHER
- Worked in the laboratory of Dr. Miriam Rafaiovich
- Created model of light absorbance and reflectance within the cell
- Created method of increasing active layer thickness while maintaining efficiency through additive-induced columnar self-assembly

LABORATORY OF MUCOSAL IMMUNOLOGY
Rockefeller University
Jun - Dec 2016

IMMUNOLOGY RESEARCHER
- Worked in the laboratory of Dr. Daniel Mucida and Dr. Bernardo Reis
- Developed an extracellular method of studying intraepithelial lymphocyte and intestinal epithelial cell interactions *in vitro* and demonstrated efficacy of model in pathogen and drug trials

ORGANIZATIONS

HACKHARVARD
Sep 2018 - Present

HACKHARVARD CO-DIRECTOR
- Hosted a 600-person hackathon at Harvard University
- Part of the Hacker Experience team, worked on event logistics and planning

HMMT
Sep 2018 - Present

PRIZE CZAR, SPOKESPERSON
- Helped organize and host nationwide math competition at Harvard and MIT
- In charge of prizes for the event and room director

HARVARD COMPUTER SOCIETY (HCS)
Sep 2018 - Present

MEMBER
- Participated in a boot camp series studying concepts involving data mining, data analysis, web development, and web scraping

SKILLS

Python (ML/Data Science)
Java
Ocaml
JS (React, Angular)
HTML 5, CSS, Bootstrap
Ruby/Rails
MATLAB
AutoCad

Biology and Materials Science Research, Nanofabrication

PROJECTS

MODELING THE EFFECT OF CLIMATE CHANGE ON THE NATIONAL PARK SERVICE
- Honorable mention (Top 78/1121) paper in the 2017 MathWorks Math Modeling Challenge
- Worked in a team to find independent data sets and create model combining sea level rise, erosion, temperature, and human activity in order to account for the likeliehood and severity of cimate-related events on National Parks within the next 50 years.

PMMA ADDITIVE-INDUCED ACTIVE LAYER SELF-ASSEMBLY IN POLYMER SOLAR CELLS
- Semifinalist in 2017 Siemens Competition in Math, Science, and Engineering
- Conducted research at Stony Brook University and Brookhaven National Labs; created an organic polymer solar cell active layer with higher external quantum efficiency andability to be mass produced

IN-VITRO MODEL FOR INTERACTIONS BETWEEN IEL'S AND INTESTINAL EPITHELIAL CELLS
- Final external system enabled the investigation of interactions within epithelium without live specimen and allowed for research into immune response pathways

MODELING THE SPREAD OF ZIKA THROUGH TWITTER ANALYSIS
- New York City Science and Engineering Fair 2nd place in computer science, JSJS Semifinalist
- Worked in a team of two to decelop a computational model aimed at predicting locations of future Zika virus outbreaks; tested efficacy against airline data