

# YASH SINGAM

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## EDUCATION

### Duke University

*Bachelor of Science in Computer Science and Statistics / Minor in Financial Economics*

GPA: 4.0/4.0

Relevant Coursework: Multivariable Calculus, Data Structures & Algorithms, Linear/Logistic Regression, Algorithm Design & Implementation, Analysis of Variance, Predictive Modeling & Data Visualization

### American Heritage School – Broward Campus

GPA: 4.58/4.00 | ACT: 36/36 | Math: 36 | English: 36

Honors: Top Scholar (Salutatorian, 2/378), Presidential Scholars Nominee, Recipient of the President's Gold Volunteer Service Award

August 2023 – May 2026

Durham, NC

August 2019 – May 2023

Plantation, FL

## EXPERIENCES

### Statistical Research Workshop

*Program Participant*

May 2024

Durham, NC

- Completed a research workshop examining key research skills and attributes under Duke's Department of Statistics, and conducted a thorough analysis of the effects of the medication lofexidine on opioid withdrawal symptoms.
- Performed exploratory data analysis, cleaned data, developed and hypothesis-tested two related regression models, and pushed out a final research presentation, all in R Studio.

### Computer Vision Model for Corn Disease Detection

*Project Team Member / DAML*

January 2024 – June 2024

Durham, NC

- Designed and compared CNN models (ResNet, VGG16, EfficientNet, MobileNet, DenseNet, LeNet, and ShuffleNet) while simultaneously tackling the dataset's background uniformity problem.
- Employed color-based segmentation to standardize images and demonstrated significant improvements in model accuracy and reliability, highlighting the importance of robust dataset preprocessing alongside advanced model architecture design for effective disease detection.

### Undergraduate Economics Research | Duke University

*Research Assistant*

November 2023 – April 2024

Durham, NC

- Assessed the effects of international economic sanctions on Russia and the EU (taking place within the Minerva Research Initiative, DoD).
- Conducted quantitative research under the supervision of a PhD economist, collected and managed data, set up APIs, contributed to R code, and worked on statistical and econometric analysis.

### Young Scholars Program | FSU

*Independent Researcher*

June 2022 – July 2022

Tallahassee, FL

- Conducted leading research over a 6-week program in predicting the spread of embers in wildfires through extensive Python programming.
- Utilized kinematic equations and Newton's laws of motion, coupled with the Python libraries NumPy and Matplotlib, to both plot and predict the spread of wildfires and their abilities to create new spot fires, factoring in wind speed, drag coefficients, and air resistance.

## EXTRACURRICULAR INVOLVEMENT

### Duke Quantitative Finance Club

*Member*

September 2023 – Present

Durham, NC

- Participated in the Introduction to Trading program in Fall 2023, and practiced market-making and trading strategies through games.

### Duke Applied Machine Learning

*Member*

January 2023 – Present

Durham, NC

- Completed Data Science in AI/ML training program research paper detailing the use of computer vision in identifying disease in corn leaves with a team of 5 students.

### Duke Sports Analytics Club

*Member*

September 2023 – Present

Durham, NC

### AHS Varsity Football Team

*Statistician*

September 2022 – December 2022

Plantation, FL

- Recorded statistics from games, analyzed data for play-call efficacy.

### AHS Future Business Leaders of America

*Co-President*

August 2019 – May 2023

Plantation, FL

- Led meetings, organized events training, created practice tests and other material to help peers, and competed at leadership conferences.

## ACHIEVEMENTS

- MAA:** 4x American Invitational Mathematics Exam (AIME) qualifier
- DECA:** ICDC International Finalist, 2<sup>nd</sup> place at Districts, 4<sup>th</sup> place at State CDC in Quick Serve Restaurant Management (QSRM)
- Florida Association of Mu Alpha Theta:** 1<sup>st</sup> place Statistics Team March Regional (2021), 2<sup>nd</sup> place Calculus Individual March Regional (2022), 15+ Individual placements at the State and National levels (2019-2023)
- FBLA:** 2<sup>nd</sup> place at State Leadership Conference, 4<sup>th</sup> place at National Leadership Conference in *Introduction to FBLA* (2020), Co-President of AHS chapter (2022-2023)

## SKILLS, INTERESTS, & LANGUAGES

- Skills:** RStudio Quarto, Java, Python, Statistical Analysis, Excel, PowerPoint, Writing, Predictive Modeling, Probability and Regression
- Interests:** Miami Sports, Coldplay, Hans Zimmer, Fantasy Football, Rap/Pop music, Star Wars, Harry Potter, Real Madrid, Hockey, Food
- Languages:** English (Native), Spanish (Proficient), Telugu (Proficient)