

# Ajay Donthula

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## EDUCATION

### Princeton University, School of Arts and Sciences

Bachelor of Science in Computational Neuroscience

Princeton, New Jersey

Expected May 2028

**Concentrations:** Biostatistics, Statistics and Machine Learning

GPA: 3.88

**Relevant Courses:** Calculus II, Molecular Biology, Electrical and Computer Engineering, Multivariable Calculus, Physics, Computer Science, Neuroscience

### Bordentown Regional High School

High School Diploma - Valedictorian (4.67 weighted, 4.0 unweighted)

Bordentown, New Jersey

September 2020 – June 2024

**Awards and Honors:** BRHS Class of 2024 Valedictorian, Mock Trial Central Jersey Champions /State Finalists / 2x County Champs, 2nd Place Princeton University Ignite STEM, Design National Engineering Challenge, 2nd place National TSA “Hydrogen Biofuel” EV Engineering Design, 3rd Place Statewide TSA BioTechnology “Algae Blooms” Research Presentation

## SKILLS

**Programming:** Python, Java, JavaScript, HTML/CSS, R, Stata/BE

**Software & Tools:** Microsoft Suite (Excel, Word, PowerPoint), Google Colaboratory, Google Docs Editors Suite, Canva, Matlab, CAD, Practice Fusion EHR, Cerridwen, SpikeOne, R Studio, Tensor Flow

**Certifications:** Bloomberg Market Concepts, Bloomberg Finance Fundamentals, Infectious Transmission Models (John Hopkins Online), Human Subjects Research (CITI), Lifeguarding with BLS/AED (American Red Cross),

**Languages:** English, Telugu (Fluent), Tamil (Fluent), Spanish (Proficient)

## WORK EXPERIENCE

### Perelman School of Medicine - Undergraduate Clinical Scholars Program

Research Fellow - Philadelphia, PA

Philadelphia, PA

May 2025 - August 2025

- Analyzed 500+ patient microbiome datasets in R, Stata, and Excel to assess treatment outcomes for severe *C. difficile* infection, applying advanced statistical techniques.
- Discovered correlation between lower GI (enema) FMT delivery and improved patient outcomes; presented findings to 100+ senior physicians at UCSP symposium.
- Authoring abstracts for submission to national/international conferences and manuscripts for peer-reviewed publication.
- Completed NIH- and NIDDK-backed epidemiology training, calculating clinical metrics (NNT, incidence, prevalence, relative risk) to evaluate treatment efficacy.

### Princeton University - Mpala Research Centre (Grevy Zebra Project)

Research Assistant - Laikipia, Kenya

Mpala, Kenya

January 2025 - Now

- Examining flee dynamics of Plains and Grevy’s Zebras in response to predation using drone footage captured from ~100m air.
- Certified drone pilot in the U.S. and Kenya, capturing over 20 hours of 4k footage over the course of 3-week collection
- Utilizing DeepLab and Sleep AI software to map movement patterns at individual and group levels, to then hypothesize claims of social dynamics amongst zebras and their interactions with their respective ecosystems.
- Collaborating on data interpretation (R Studio, Tableau, etc) along with Dr. Craig Marshall and Dr. Isla Duporge and currently authoring a research paper for submission to *The Naturalist* journal.

### Princeton University - Hasson Lab (1Kd Project / Baby Lab)

NeuroAI Research Intern - Princeton, NJ

Princeton, NJ

October 2024 – Now

- Analyzing data from data set containing 1.5 million hours of infant cognitive data for the 1kD project, dedicating 10 hours/week to develop predictive models for brain development.
- Applying Python and AI-driven data manipulation to identify key indicators of executive function (EF) and self-regulation.
- Filtering confounds to enhance model accuracy, collaborating with interdisciplinary teams to scale findings.
- Employing findings to later create deep learning language models that combine power of AI and efficiency of human mind.

### Comprehensive Neurology LLC

Neurology Medical Assistant / Shadowing - Hamilton, NJ

Hamilton, NJ

May 2024 – August 2024

- 8-week Program, 40 hours per week, aiding over 50 patients per day. Supported daily office operations and patient scheduling, prepared and submitted patient documentation for WC, MVA, NJ Disability, and surgical precertifications.
- Effectively utilized practice Fusion EHR for accurate record management. Shadowing Neurologists Dr. Pasupuleti and Dr. Zhang, observing cases ranging from neurological degenerative diseases (Parkinson's, Alzheimer's, Epilepsy) to motor function disability (Nerve blockage, Multiple Sclerosis).
- Gained experience in interpreting MRI, EEG, and EMG results to assist in patient care. Utilized Excel at a proficient level to create patient charts / organize dictations

**Rowan-Virtua School of Translational Medicine - Devilbiss Lab****Glassboro, NJ***Neuroscience Research Intern - Glassboro, NJ**June 2023 – August 2024*

- Research in the Devilbiss Lab centers on LC-NE regulation of neural activity and cognition, using EEG to study 8 animal subjects (4 rabbits, 4 rats) with and without traumatic brain injury.
- Experiments involve neurotransmitter injections, utilization of ritalin in treatment of traumatic brain injuries, and data analysis with bioinformatics software (MatLab, SpikeOne); published findings through SOM/GSBS.

**Sea6 Energy Biofuel Company****Bangalore, India***R&D Student Intern - Bangalore, India**June 2023 – August 2023*

- Studied Seaweed Carrageenan bioconversion process into biopolymers, biostimulants, and platform chemicals, collaborating with experts.
- Utilized high pressure liquid chromatography for molecular analysis, research biomass-based polymers, conducted over 50 PCRs for bacterial infection models, and evaluated Carrageenan with 5 additive on 9 variations of plants

**VOLUNTEER****Princeton Medical Center - Penn Medicine****Princeton, NJ***Care Ambassador - Neurology Department**September 2025 – Now*

- Contributed 150+ volunteer hours supporting nurses with restocking and patient interaction, for a smooth clinical workflow.
- Gained meaningful exposure to the hospital, patient care, and interdisciplinary teamwork in a fast-paced medical setting.

**Capital Health Patient Services****Hopewell, NJ***Patient Aide / Head of Mental Health Department**June 2022 – August 2024*

- Ran 15 Mental Health Programs promoting well-being for patients with conditions like depression, anxiety, and bipolar disorder aiding over 200 cancer patients, working twice a week for 12 week period (192 hours approximately)
- Provided direction to thousands of patients and visitors within the hospital, gaining valuable exposure to hospital operations, staff, and patient care practices

**EXTRACURRICULAR ACTIVITIES**

Running Club, Intramural Volleyball / Spikeball / Basketball, Acapella (Old Nassoul), Penn Medicine Volunteering, Everywhere Project, Snow & Ski Club, Local Amateur Golf League