Divya Koyyalagunta

divyakoyy@gmail.com | https://divyakoyy.github.io/

EDUCATION

Tri-Institutional PhD Program (Cornell/Weill Cornell+MSK+Rockefeller) GPA: 4.00/4.00	New York City, NY
 PhD student in Computational Biology and Medicine Relevant Coursework: Human Genomics, Applied Machine Learning, Deep I Probabilistic Models and Machine Learning 	2021-present Learning,
 Duke University Computer Science B.S. Neuroscience Minor Cum Laude, GPA: 3.86/4.00, Major GPA: 3.93/4.00 Relevant Coursework: Molecular Biology, Genetics and Evolution, Biochemiss Algebra, Probability, Computational Genomics, Intro to AI, Computer Vision 	Durham, NC 2014 - 2018 stry, Linear
RESEARCH EXPERIENCE	
 Morris Lab, Computation and Systems Biology Program Memorial Sloan Ketter Advisor: Quaid Morris Developed a method using gradient based learning of discrete objects to learn metastasis from patients' cancer evolution trees. Working on causal inference methods for mapping gene regulation in single of the second second	ering Cancer Center Jan 2022 - Present n the history of cell data.
 Leslie Lab, Computation and Systems Biology Program Memorial Sloan Ketter Advisor: Christina Leslie Developed scGraphReg, a model which learns gene regulation in single cells and chromatin interactions. 	ering Cancer Center <i>Jul 2021 - Oct 2021</i> using multiomics
 Prediction Analysis Lab, Department of Computer Science Advisor: Cynthia Rudin Developed a novel algorithm to play the game Codenames. Evaluated knowl like BabelNet as well as word embeddings such as word2vec and BERT to ach state-of-the-art results when playing against humans. 	Duke University <i>May 2018 - Feb 2021</i> ledge ontologies hieve
 Mooney Lab, Department of Neurobiology <i>Advisor: Richard D. Mooney</i> Investigated songbirds' propensity to sing and imitation ability, both interest: parallels to human brain structures involved in the process of song learning a Created a database that tracks all birds in the lab and relates birds by their he which continues to be used by the lab today. 	Duke University Mar 2015 - May 2016 ing due to the and memorization. ereditary history,

Arenkiel Lab, Jan and Dan Duncan Neurological Institute

Advisors: Benjamin Arenkiel, Dona Kim Murphey

• Investigated how early amyloid deposition and somatostatin cell loss in the mouse olfactory system correlate with olfactory discrimination deficits in 5xFAD mice (an Alzheimer's model mouse) by collecting behavioral and histological data.

PUBLICATIONS

Koyyalagunta D, Sun A, Draelos RL, Rudin C. Playing Codenames with Language Graphs and Word Embeddings. *Journal of Artificial Intelligence Research*. 2021 Jun 23;71:319-46.

TEACHING EXPERIENCE

Teaching Assistant

Taught a weekly discussion section, tutored students in small groups, held office hours, graded assignments, and answered questions online for the following courses:

- Introduction to Computer Science (Fall 2016)
- Data Structures and Algorithms (Spring 2017 and Spring 2018)
- Introduction to Computational Genomics (Fall 2017)

Research Mentor

• Parker Hayashi (high school student); Summer 2023-present

PROFESSIONAL EXPERIENCE

Apple, Inc.

Senior Software Engineer

- Designed and shipped numerous APIs for HealthKit framework, which is the central repository for health and fitness data across iOS and watchOS.
- Implemented support for storing and accessing electrocardiogram data in HealthKit.
- Presented at Apple's WWDC (Worldwide Developers Conference). Projects that I have led and implemented have been featured on Forbes and Business Insider.

Apple, Inc.

Software Engineering Intern

- Parallelized the system for testing software updates on all iOS, watchOS and tvOS devices, increasing speed of testing by up to 3x. Built a reporting UI for engineers to easily triage results.
- Pitched a feature demo to a panel of VPs and won first place in the iContest.

PRESENTATIONS

Anderson Cancer Symposium

Gradient-based Migration History Inference of Metastatic Cancers (Poster) **D. Koyyalagunta**, Q. Morris

Rockefeller University Sep 2023

Sunnyvale, CA Aug 2018 - Apr 2021

> Cupertino, CA Summer 2017

Duke University

International Conference on Machine Learning (ICML), Comp. Biology Workshop	Honolulu, HI
Gradient-based Migration History Inference of Metastatic Cancers (Poster)	Jul 2023
D. Koyyalagunta, Q. Morris	
Machine Learning in Computational Biology (MLCB)	Virtual
scGraphReg: modeling gene regulations in single cells using multiomics and chromatin intera	ctions Nov 2021
A. Karbalayghareh, D. Koyyalagunta , C. Leslie	
Apple Worldwide Developers Conference	Apple, Inc.
Exploring New Data Representations in HealthKit	Jun 2019
Duke Machine Learning Day	Duke University
Electronic Health Records for Interpretable Machine Learning. (Featured Presentation)	May 2018
A. Sun, D. Koyyalagunta , C. Chi, R. Draelos, C. Rudin	C C
Computer Science Department Undergraduate Research Symposium	Duke University
Electronic Health Records for Interpretable Machine Learning. (Poster)	May 2018
A. Sun, D. Koyyalagunta , C. Chi, R. Draelos, C. Rudin	C C
Society for Neuroscience Conference	Washington, D.C.
<i>Early amyloid deposition in the anterior olfactory nucleus correlates with specific mixture discrimination deficits in 5xFAD mice. (Abstract and Poster)</i> D.K. Murphey, D. Kovvalagunta , B. Arenkiel	Nov 2014

HONORS + AWARDS

Best Poster Award (International Conference on Machine Learning Comp. Bio Workshop) Given for poster "Gradient-based Migration History Inference of Metastatic Cancers" (2023).

NSF Graduate Research Fellowship Weill Cornell GRFP recognizes and supports outstanding graduate students who have demonstrated the potential to be high achieving scientists and engineers, early in their careers. GRFP provides three years of financial support (2023).

Dean's List	Duke University
Awarded Fall '15*, Spring '16, Fall '16, Spring '17, Fall '17* and Spring '	18.
*Indicates with Distinction (GPA in the highest 10% of undergraduates)
Phi Beta Kappa Honors Society	Duke University
In recognition of high attainments in liberal scholarship (2019).	
Duke Technology Scholar	Duke University
One of 34 women selected for a Duke initiative to help close the gender	gap in computer science (2017).
Main belt asteroid named "31512 Koyyalagunta"	NASA Jet Propulsion Laboratory

Awarded for accomplishments in scientific research by Intel ISEF (2014).

Grand Award Recipient

Intel International Science and Engineering Fair First place: Role of Somatostatin Interneurons in Alzheimer's Disease (2014). Fourth place: Utilization of Audio and Visual Prompting to Aid Dementia Patients with Daily Tasks (2012).

LEADERSHIP AND SERVICE

Duke Technology Scholars Program

VP of Mentorship

 I manage the nationwide mentorship program, resource guide, and alum database and connect undergraduate women with Duke alumnae working in various industries.

Mentor

I mentor undergraduate Duke women throughout the summer to help guide them through the • technical and professional aspects of their tech internships.

Tri-Institutional Outreach Club

Leadership Team

I help organize volunteer programs across the Tri-I, managing mentorship initiatives across 100s of graduate students and mentees.

Tri-Institutional Mentor Initiative

Mentor

• I guide students through the PhD application process, which includes helping them choose programs, reading their essays and CV, and conducting mock interviews.

High School Catalyst Program

Mentor

I serve as a mentor for New York high school students from self-reported underrepresented • minority, disadvantaged, and/or first-generation immigrant backgrounds. We provide a 7-week biomedical research experience where we guide the mentee in writing their own NSF style research proposal.

Computational Biology and Medicine PhD Program

Student Representative

I meet with directors of the PhD program to advocate for student concerns regarding • curriculum, student well-being, and research support.

Founder

I organized events to connect women across engineering and leadership. This provided a space for women to speak freely about their experiences and support one another at the company.

Duke Dhamaka (Dance Team)

Captain and Dancer

Group Leader

Led, danced and choreographed for a team of 20 dancers that competed across the U.S.

Females Excelling More in Math, Science, and Engineering

Duke University 2016-2017

Duke University

2014 - 2018

Apple, Inc. 2019-2021

Weill Cornell/MSK 2022-present

Weill Cornell/MSK

Duke University

2022-present

2019-present

2023-present

Weill Cornell/MSK 2022-2023

Weill Cornell/MSK

2022-present

• Taught groups of elementary and middle school aged girls basic physics, chemistry, and engineering activities through hands-on activities.

National Alliance of Mental Illness

Policy Executive

Duke University 2015-2017

• Proposed a change to the health requirements for taking academic absence to be inclusive of those with mental illnesses, which was approved by the university.

SKILLS

Objective-C, Python, Java, SQL, iOS development, git, multithreaded application development, databases, API design, numpy, scipy, keras