

# Prateek Anand

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My research interests are in developing novel AI/ML computational methods. Broadly, I am invested in deep learning, traditional machine learning, and statistical approaches that are scalable and interpretable. Current applications of my work are centered around genetics and published in RECOMB 2024 and Genome Research.

## EDUCATION

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**UCLA | Ph.D. Computer Science**

**2024 - 2029**

Advisor: Dr. Sriram Sankararaman

I am currently investigating how to better predict human complex traits by strategically incorporating genetic features using statistical modeling. I am also exploring generative models and imputation for genetic data, as well as improving admixture models through neural approaches.

**UCLA | B.S. Computer Science**

**2020 - 2024**

## PROFESSIONAL EXPERIENCE

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**UCLA Computer Science | Sriram Lab**

**Jun 2022 - Present**

*Graduate Student Researcher*

- Developing scalable machine learning/statistical software to understand human genetic architecture (relationship between genetics and traits)
- Projects: QuadKAST (co-first author) and FAME

*Research Intern (Bruins in Genomics)*

- Evaluated novel nonlinear explanation method for machine learning models on simulated genetic data (form of symbolic regression used to represent complex black box models)
- Presented at UCLA poster symposium

**Stanford University School of Medicine | Curtis Lab**

**Jun 2023 – Jan 2024**

*Research Intern (Canary CREST Program for Early Cancer Detection)*

- Early detection of blood cancer through computational modeling and inference, refined model built using approximate bayesian computation
- Presented at Stanford poster symposium

**UCLA Jonsson Comprehensive Cancer Center | Boutros Lab**

**Jan 2021 - Apr 2022**

*Research Assistant*

- Updated, maintained, and evaluated CI/CD HATCHet pipeline for use on lab cluster compute server (tool for quantifying/locating copy-number aberrations in human cancer samples)
- Project: Metapipeline-DNA

## PUBLICATIONS

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### QuadKAST | Genome Research

Sep 2024

- Fu, B.\*, Anand, P.\*, Anand, A.\*, Mefford, J., & Sankararaman, S. (2024). *A Scalable Adaptive Quadratic Kernel Method for Interpretable Epistasis Analysis in Complex Traits*.  
<https://doi.org/10.1101/2024.03.09.584250>

### Metapipeline-DNA | Preprint

- Patel, Y.\*, Zhu, C.\*, Yamaguchi, T. N.\* et al. Anand, P., ... Boutros, P. C. (2024). *Metapipeline-DNA: A Comprehensive Germline & Somatic Genomics Nextflow Pipeline*.  
<https://doi.org/10.1101/2024.09.04.611267>

### FAME | Preprint

Sep 2023

- Fu, B.\*, Pazokitoroudi, A.\*, Xue, A., Anand, A., Anand, P., Zaitlen, N., & Sankararaman, S. (2023). *A Biobank-Scale Test of Marginal Epistasis Reveals Genome-Wide Signals of Polygenic Epistasis*.  
<https://doi.org/10.1101/2023.09.10.557084>

## TEACHING

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### Teaching Assistant

Jan 2025

- UCLA CM146: Introduction to Machine Learning

### Course Reader

Jan 2024

- UCLA CM146: Introduction to Machine Learning

### Course Reader

Jan 2023

- UCLA CM146: Introduction to Machine Learning

## SKILLS

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**Programming languages:** Python, C++

**Frameworks:** Scikit-learn, PyTorch, Numpy, Pandas, Git

**Courses:** Machine Learning, Artificial Intelligence, Neural Networks and Deep Learning, Big Data Analytics, Software Engineering and Construction, Data Structures, Algorithms and Complexity, Linear Algebra, Statistics and Probability, Optimization, Machine Learning in Genetics, Algorithms in Bioinformatics

**Other:** Probabilistic Models, Hypothesis Testing, Cluster Computing

## AWARDS

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**Warren Alpert Computational Biology and AI Fellow:** Graduate Training Fellowship

2024

**NCI Scholarship:** Funding for Canary CREST Research Program

2023

**NSF REU Scholarship:** Funding for Bruins in Genomics Research Program

2022

**UCLA Dean's Honors List:** Winter 21, Spring 21, Fall 21, Winter 22, Fall 22, Winter 23

**Andy Grove Intel Scholarship:** Education Scholarship for Academic Excellence

2020

**Valedictorian:** Homestead High School

2020