Sujay Nair

[Personal Website](), [Google Scholar](), snair303@gatech.edu, US Citizen

EDUCATION

Georgia Institute of Technology, Atlanta, GA   2022-2026
Double Major: B.S. in Computer Science (GPA: 4.0); B.S. in Mathematics (GPA: 3.8)
Honors: Deans Scholarship for College of Sciences, Faculty Honors

EXPERIENCE

Machine Learning Research Intern   Fall 2023-Present
MIT Climate & Sustainability Consortium, Cambridge, MA
Advisors: Dr. Evan Coleman, Prof. Sherrie Wang, Prof. Elsa Olivetti
Training neural networks to infer geological properties of soil with applications in carbon capture and mineral discovery. Submissions at ICLR 2024, ICML 2025.

Machine Learning Intern   Summer 2023
Fifth Set Analytics, San Francisco, CA
Trained neural networks for automated foul calling/refereeing for basketball building on pre-trained pose estimation models.

Student Researcher   Spring 2023
Georgia Tech Robot Learning and Reasoning Lab, Atlanta, GA
Advisor: Prof. Danfei Xu
Developed methods for human hand-tracking for collecting robotics data using RealSense camera and pre-trained hand pose estimation models.

Research Intern
NASA Jet Propulsion Lab (JPL), Pasadena, CA   Summer/Fall 2021
Advisor: Dr. Kyle Pearson
Trained convolutional neural networks to detect 5000+ Extrasolar Planet transits and recurrent neural networks to predict 4 planetary parameters (RP/RS, A/RS, Period, Mid-transit Time).

Student Researcher   2019-2022
NASA Exoplanet Watch
Advisor: Dr. Rob Zellem, Dr. Kalee Tock
Updated exoplanet transit properties using light curve data, numerous publications at top astronomy conferences.

HONORS & AWARDS

Deans Scholarship for College of Science, Georgia Tech	2022
Deans List, Georgia Tech	2022-Present
Faculty Honors, Georgia Tech	2022,2023,2024
Betty Neall Youth Award of Merit, East Bay Astronomical Society	2021
1st Place, Washington State Science and Engineering Fair	2021
Wolfram Research Award, Washington State Science/Engineering Fair	2021
NASA Earth Sciences Award, Washington State Science/Engineering Fair	2021
Select Interview for the Research Notes of the American Astronomical Society, American Astronomical Society	2020
President's Award for Educational Excellence	2019

TECHNICAL SKILLS

Programming - Python (PyTorch, Numpy), R, Java, C, C++, x86/LC3 Assembly
Technologies - AWS, GCP, GitHub, JavaFX
Concepts - Machine Learning, Computer Systems, Object Oriented Programming, Data Structures and Algorithms, Astrophysics/Cosmology, Geophysics

PUBLICATIONS & PREPRINTS

[12] **Sujay Nair**, Evan Coleman, Elsa Olivetti, Sherrie Wang. Agro-alchemy: Using geophysical data to improve soil measurement. *In Progress.*

[11] Evan Coleman, **Sujay Nair**, Xinyi Zeng, Elsa Olivetti. Structured spectral reconstruction for scalable soil organic carbon inference. *International Conference on Learning Representations (ICLR) Tackling Climate Change with Machine Learning Workshop.* Paper

[10] **Sujay Nair**, Kyle Pearson. Using Deep Learning with Phase Folded Light Curves to Detect Exoplanets. *American Astronomical Society (AAS) 237.* Abstract

[9] **Sujay Nair**, Caroline Scolari, Jay Kelath, Aishwarya Rammohan, Richard Ozer, Gloria Ng, Wesley Chang, Pat Boyce. Citizen Scientist Transit and Comparison Star Analysis of HATS-4 b with the East Bay Astronomical Society. *American Astronomical Society (AAS) 237.* Paper

[8] **Sujay Nair**. Transit Analysis of TOI 1780.01. *ExoDem 2020 Caltech.* Poster

[7] **Sujay Nair**. Mid-transit and Reference Star Analysis of HAT-P-37 b and Kepler-45 b. *Exoplanet3 Heidelberg*

[6] **Sujay Nair**, Jonathan Varghese. Transit Analysis of Exoplanets TrES-5b and WASP-43b. *Research Notes of the American Astronomical Society (RNAAS), 236th American Astronomical Society (AAS), Oral Session - Extrasolar Planets III: Transits and Populations.* Paper

[5] **Sujay Nair**, Krithi Koodli, Elliott Chalcraft, Kalee Tock. Analysis of Candidate Exoplanet TOI717.01 and Confirmed HAT-P-3b. *SAS.* Paper

[4] **Sujay Nair**, Jonathan Varghese, Kalee Tock, Robert Zellem. Analysis of HAT-P-23b, Qatar-1b, WASP-2b, and WASP-33b with an Optimized EXOplanet Transit Interpretation Code. *Published and Presented: Society for Astronomical Sciences (SAS)* Paper

[3] Ryan Caputo, ..., **Sujay Nair**, ... Investigation of 14 Wide Common Proper Motion Doubles. *Published: Journal of Double Star Observations (JDSO).* Paper

[2] Robert Zellem, ..., **Sujay Nair**, ... Utilizing Small Telescopes by Citizen Scientists for Transiting Exoplanet Follow-Up. *Published: Publications of the Astronomical Society of the Pacific (PASP).* Paper

[1] Quinn Perian, **Sujay Nair**, Kalee Tock. Freshening Exoplanet Transit Midpoints. *235th Meeting of the American Astronomical Society (AAS), 2020 CubeSat Workshop.* Poster