Sriram S. Elango

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Internships

Aerospace Engineering Research Intern | *Princeton University* 2025 – Present
- Designed and implemented a custom diffusion model to predict thrust-control vectors for global trajectory search in the Circular Restricted Three-Body Problem (CR3BP).

Astrophysics Research Intern | *Harvard-Smithsonian CfA* 2024 – Present
- Developing new methods for precision tracking of interstellar objects and NEOs using JWST and terrestrial telescopes.

Solid Propulsion Team Member | *MIT Rocket Team* 2024 – Present
- Manufactured rocket nozzles and conducted hydrostatic and static firing tests for the Spaceport America Cup competition.

Engineer & Researcher | *Institute for Earth Observations* 2021 – Present
- Developed ground stations and designed lowcost CubeSats for international distribution; showcased at IEEE, SmallSat Conference, and AGU.
- Collaborated with NASA, U.S. Naval Academy, Kenyan Space Agency, and more; impacted STEM curricula globally.

Machine Learning Research Intern | *Harvard-Smithsonian CfA* 2024 – 2024
- Designed a multimodal (infrared video & audio) transformer architecture for UAP analysis, integrating AST and MViT with DINO pretraining and InfoSieve.

Machine Learning Research Intern | *National University of Singapore* 2022 – 2024
- Conducted NLP, computational linguistics, and AI bias research on transformer models; presented at international conferences.

Machine Learning Engineering Intern | *Fireflies.ai* 2021 – 2023
- Integrated GPT-3 and advanced transformer models for automated meeting summarization, robust Q&A systems, and additional NLP tasks.

Astrophysics Researcher | *Summer Science Program (New Mexico Tech)* 2022 – 2022
- Computed Keplerian elements of asteroid 2001 MZ7 using the Method of Gauss and Monte Carlo simulations; published by IAU MPC.

NASA SEES Intern | *NASA & UT Austin* 2021 – 2021
- Trained and evaluated YOLOv4 CNNs for precise mosquito habitat detection; first author at AGU, Globe IVSS, arXiv, and NASA symposium.

Astrobiology Research Intern | *ASSIP (George Mason University)* 2021 – 2022
- Simulated ETI probabilities via Monte Carlo; lead author at NASA's AbSciCon22 on extraterrestrial intelligence modeling.

WSSP Researcher | *Rutgers University* 2021 – 2021
- Analyzed Landoltia punctata DNA sequences; published two mRNA sequences in NCBI GenBank and achieved course valedictorian.

Education

Harvard College — Cambridge, MA

S.B. in Mechanical and Aerospace Engineering, Astrophysics — 2023 – 2027

- **Activities:** Harvard Libertarian Association (President & Founder), I.C.D.P. Fellowship, Franklin Fellowship, Harvard Salient, Emerging Technology Group (NASA Artemis), Harvard Innovation Labs, Student Astronomers at Harvard-Radcliffe

Massachusetts Institute of Technology — Cambridge, MA

Cross-Enrollment — 2025 – 2027

- **Activities:** MIT Rocket Team (Solid Propulsion, Liquid Propulsion)

Cinnaminson High School — Cinnaminson, NJ

High School Diploma — 2019 – 2023

- **Academics:** *SAT*: 1570, *Rank*: 4/207, *GPA*: 105.3782
- **Activities:** Class Vice President, Founder & President (Science and Engineering Research Club), Design Lead (Robotics), Founder & President (TSA), National Honor Society, World Affairs Council, Global Economic Forum

Awards and Honors

- **HCRP Research Fellow**, Harvard College — 2024, 2025
- **Congressional Award Gold Medal**, U.S Congress — 2023
- **Congressional App Challenge: 1st Place**, U.S. House of Representatives — 2021
- **Carson Scholar**, Carson Scholars Fund — 2022
- **South Jersey Achievement**, South Jersey Magazine — 2022
- **Hall of Fame**, Cinnaminson High School — 2023
- **AP Scholar with Distinction**, College Board — 2022
- **National Merit Commended Student**, College Board — 2022
- **HOBY Youth Leadership Delegate**, Cinnaminson High School — 2021
- **Voice of Democracy (School & District): 1st Place**, Veterans of Foreign Wars — 2021

PUBLICATIONS

1. **Elango, S.**, Loeb, A. Astrometric Parallax Measurements with JWST for Localization of Near-Earth Objects. *arXiv preprint*, 2025.
2. Moore, J. D., Kramer, M., Gallant, J., Khatri, A., **Elango, S.** Creating the Earth SySTEM Observatory: Integrating Spaceborne and Ground-Based Environmental Research. *IEEE ISEC, Princeton University*, 2025.
3. **Dominé, L.**, Elango, S., Kricheli, J., Fedorenko, A., Brenard, T., Jacoby, D. Multi-Modal Generalized Class Discovery for Scalable Autonomous All-Sky Surveys. *IAIFI Summer Workshop, Massachusetts Institute of Technology*, 2024.
4. Moore, J., **Elango, S.**, Friedman, M., Kang, J., Maceo, C. The A3Sat Emulator: A Catalyst in Disruptive CubeSat and Space Technology. *IEEE ISEC, Princeton University*, 2024.
5. **Elango, S.**, Moore, J., Friedman, M. A3Sat: Expanding STEM Education through CubeSats and a Global Data Network. *AGU Annual Meeting*, 2023.
6. Moore, J., Friedman, M., **Elango, S.**, Kang, J., Maceo, C. A3Sat Emulator Enterprise: To Observe the Earth and Visualize the Future. *Small Satellite Conference*, 2023.
7. **Elango, S.**, Jaidka, K. Data-Driven Unsupervised Semantic Network Algorithm for Large Language Model Examination/Exploration. *SSRN*, 2023.
8. **Elango, S.**, Jaidka, K. The GPT-Comparator: Discovering and Reporting Spatial and Topical Biases in Generative Pre-Trained Transformers. *SSRN*, 2023.
9. Moore, J., Friedman, M., **Elango, S.**, Kang, J., Maceo, C. A3Sat: Using CubeSat Emulators to Broaden Advanced Participation in STEM Education. *IEEE ISEC, Johns Hopkins University (APL)*, 2023.
10. **Elango, S.**, Feng, E., Melendrez, E. Observations of Near-Earth Asteroid 2001 MZ7. *IAU Minor Planet Center*, 2022.
11. **Elango, S.**, Jaidka, K. A Multi-Modal Architecture for Identifying Anti-Social Imagery. *ICWSM*, 2022.
12. **Elango, S.**, Summers, M. Estimation of Extraterrestrial Intelligent Civilizations and Attributes per Exoplanetary Continuum through Algorithmic Simulation and Civilization Modeling. *AGU AbSciCon*, 2022.
13. Moore, J., **Elango, S.**, Friedman, M., Kang, J. A3Sat: Using CubeSats to Inspire the Next Generation STEM Professionals. *IEEE ISEC, Princeton University*, 2022.
14. **Elango, S.**, Ramachandran, N. Novel Approach to Autonomous Mosquito Habitat Detection Using Satellite Imagery and Convolutional Neural Networks for Disease Risk Mapping. *AGU Fall Meeting*, 2021.
15. **Elango, S.** Landoltia punctata clone W377.20 urease accessory protein-like mRNA. *NCBI GenBank*, 2021.
16. **Elango, S.** Landoltia punctata clone W378.20 ribulose-1,5-bisphosphate carboxylase small subunit-like mRNA. *NCBI GenBank*, 2021.