Akila Saravanan

akilasar@mit.edu | 609 772 2412 | Cambridge, MA

Passionate & self-motivated problem-solver with experience developing software for air & spacecraft systems. A Junior at MIT on track to graduate in Jan 2023 with B.S (dual)degrees in Aerospace & Comp Science and minor in Science Writing.

Education

Massachusetts Institute of Technology (GPA 5.0/5.0)

Class of 2023 — *Candidate for Bachelors of Science degrees in Aerospace Engineering and Computer Science [double major], Minor in Science Writing & Communication*

- Professional development with the Gordon Engineering Leadership Program, focused on being an effective leader in engineering contexts to complement technical experience

Work Experience

Investment Analyst Intern

Dec '21 – Jan '22 — *Meru Capital Group*

- Analyzed companies across industries like telecom, entertainment, technology, crypto, etc to make private and public equity investment decisions
- Interpreted macroeconomic data and market trends to understand the investing climate

Camp Counselor and Research Mentor

May – July '20 & June – July '21 — *NJ Governor's School of Engineering and Technology (Rutgers University)*

- Worked in a team to swiftly transition the four-week intensive STEM program for exceptional high school students online, due to the pandemic
- Maintained continuous communication with students, mentors and staff to create an enriching and novel program in an evolving environment
- Taught ML classes and mentored groups on related research projects

Academic Experience

Undergraduate Student Researcher

Oct '19 – Present — *MIT Dynamics, Infrastructure Networks and Mobility Lab (DINaMo)*

- Developing algorithms to best distribute drone swarms for continuous data collection – identifying optimal sampling locations and developing the best schedule for continuity
- Analyzed traffic patterns with CNNs using real-time data from a swarm of drones
- Collected drone footage to construct an aerial vehicular database, including edge cases
- Used robustness testing to identify gaps in algorithms, and implemented improvements

Aug '20 – Present — *NJIT I-Corps*

- Constructed a robotic crawler, gathered and pre-processed culvert data from 360-degree cameras. Paper published in ASCE's Journal of Pipelines Systems Engineering Feb 2019
- Currently automating the defect identification process using ML for an end-to-end commercial solution with support from NSF I-Corps for entrepreneurial training

Sept – Dec '19 — *MIT Beaver Works and Lincoln Labs*

- Applied data science methods for space situational awareness to estimate satellite orbits and identify unexpected behavior to prevent collisions
- Collaborated with a multidisciplinary team to brainstorm approaches to analyze data

June – Oct '18 — *NJ Governor's School of Engineering and Technology (Rutgers University)*

- Developed CAD models of ornithopter wings and control surfaces, integrated printed parts with an Arduino for control and navigation, programmed wind-correction with sensor input
- Team presented research paper at MIT IEEE Undergraduate Research Technology Conference

Relevant Coursework

Automatic and Feedback Control, Autonomy and Decision Making, Robotics, Algorithms, Machine Learning, Probability, Linear Algebra, Differential Equations, Aerospace Design

Skills, Awards & Leadership

Software

- Python, TensorFlow, PyTorch, OpenCV - Advanced
- Java, MATLAB - Intermediate
- Arduino/C++ - Basic

License

Private Pilot and Remote (Drone) Pilot

Publications & Presentations

- "Neural Space Navigator: Autonomous Guidance of a Moon Lander for Orbit-to-Ground Descent": Oct 2021, 14th Annual Wernher von Braun Memorial Symposium Student Poster Competition
- "Using Fused Neural Networks for a Multi-sensory Approach to Human Emotion Classification Video": Mentor: 2021 Governor's School of Engineering & Technology Research Journals
- "Electronic Ornithopter Systems: Manual Navigation and Autonomous Hovering in Micro Air Vehicles": Governor's School Scholar: 2018 Governor's School of Engineering & Technology Research Journals
- "Adapting 360-Degree Cameras for Culvert Inspection: Case Study: High School Student Research": ASCE Journal of Pipelines Systems Engineering & Practice Vol. 10 Issue 1 - Feb '19

Leadership

MIT Flying Club Sep '19 – Present: Webmaster Sep '19 – Jun '20, President June '20 – Present

MIT Sport Taekwondo Sep'19 – Present: Tournament Coordinator Jan – Jun'20; VP Jul'20 – Present

Tech Flight Corp - A 501(c)(3) that owns and operates a Cessna 150 aircraft for student flight training in the Boston region, Jun '20 – Present: Board Member & Webmaster responsible for developing and managing the website, accounts, and outreach

Sustainability Initiatives Sep'17 – Present:

- West Windsor Township, NJ - Community organizer for single-use plastic bag ban
- MIT Waste Watchers - Food waste reduction campaign volunteer
- MIT Trash-to-Treasure – Volunteer

Extra Curriculars

Taekwondo (2nd Degree Blackbelt), Piano, Carnatic (Indian Classical) Violin, Golf

Languages

English, Spanish, Sanskrit, Hindi

Awards

- Brooke Owens Fellow Class of '22
- Chevron SWE Scholarship recipient '19
- Meredith Toms Memorial SWE Scholarship recipient '21