Aaron Angress

He/Him/His
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EDUCATION

Northeastern University *Boston, MA*
Candidate for Bachelor of Science in Physics, Honors Program *Expected May 2024*
Minors: Math, Mechanical Engineering **GPA: 4.0**
Relevant Coursework: Quantum Mechanics, Multimessenger Astrophysics, Fourier Series & PDEs, Probability & Statistics, Electricity & Magnetism 1&2, Classical Dynamics, Electronics with Lab, Intro to Material Science with Lab

RESEARCH INTEREST

The formation, identification, and evolution of structure in our universe on both galactic and cosmological scales. My current research focuses on identification of stellar feedback-driven bubbles.

RESEARCH EXPERIENCE

Harvard-Smithsonian Center for Astrophysics *Cambridge, MA*
Star Formation Research Co-op *July 2023 – Present*

- Identified thousands of stellar feedback-driven galaxy bubbles programmatically from galactic simulation data of a dwarf-spiral and Milky Way-like galaxy
- Generated large whole-galaxy analytical datasets
- Investigated properties of identified bubbles using Python to determine their effect on galactic star formation
- Presented findings at Harvard-Heidelberg Star Formation conference; paper near submission
- Won Northeastern University College of Science Unpaid Research Scholarship

E Ink Corporation *Billerica, MA*
Applied Research Co-op *July 2022 – December 2022*

- Developed electro-optical testing methods to probe fundamental electrophoretic behavior of charged pigments in ePaper displays
- Down-selected test sequences for best optical performance based on statistical analysis of large datasets in JMP
- Studied temperature dependence of electrophoretic pigment mobility and resulting color state quality
- Programmed dozens of MATLAB scripts for large-scale data analysis
- Built over 100 test structures to validate the performance of a novel ePaper display architecture

Sridhar Lab *Boston, MA*
Student Researcher *January 2022 – May 2022*

- Extracted 3D model of 2 patients' aortas, inferior vena cavas, and kidneys from a magnetic resonance angiograph
- Wrote program to find optimal flip angles for T1 mapping linear regression with Matplotlib contour plot
- Simulated magnetic resonance signal intensity of nanoparticles using Python
- Presented with Honors Early Research Award

CONFERENCE PRESENTATIONS

"Unmasking Stellar-Feedback Driven Bubbles: Identification and Properties Analysis" – Harvard-Heidelberg Star Formation Workshop 2023 (Research Talk), Accepted for 243rd AAS Meeting (Poster)

PUBLICATIONS

NEAR SUBMISSION: "Unmasking Stellar-Feedback Driven Bubbles: Identification and Properties Analysis"

AWARDS/HONORS

COS Unpaid Domestic Research Co-op Scholarship
Honors Early Research Award
Departmental Academic Excellence Award
Dean's List
National Merit Scholar
University Honors Program

ADDITIONAL EXPERIENCE

Society of Physics Students *September 2022 – Present*

Vice President, Mentorship Chair

- Paired 30+ physics student mentors with underclassmen to promote professional development and community
- Represented the physics department at prospective student events
- Collected and relayed the student body's wishes to the physics program administration

Out in STEM *January 2023 – Present*

Vice President

- Hosted events to foster community amongst queer students in STEM at Northeastern University
- Organized panels and industry/professor talks for advice for members of the LGBTQ+ community
- Revived club from state of inactivity and low attendance

COMMUNITY SERVICE

Food Recovery Network *January 2023 – Present*

- Delivered unsold food from businesses around Boston to a local homeless shelter, preventing unnecessary food waste

STUDY ABROAD

"Design in the Wilds" Dialogue of Civilization *Summer 2021*

- Completed two Experience Design courses in Hawaii and Alaska; designed and tested a suitcase prototype

SKILLS

Computer: Python, C++, MATLAB, Java, JMP, AutoCAD, SolidWorks, Mathematica, 3DSlicer, Glue, Microsoft Word, PowerPoint, Excel

Additional Skills: Arduino, basic circuitry knowledge/construction, computer hardware, beginner French/Spanish