Adam Nelson-Archer

National scholarship recipient in Computer Science with a concentration in data analytics. Proficient in a multitude of programming languages and equipped with a diverse portfolio spanning web development to academic facilitation. Passionate about research endeavors and committed to pioneering advancements in the field.

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EDUCATION

University of Houston | *B.S. Computer Science* | *B.S. Mathematics*
Houston, TX | 2022-2025 | Major GPA: 4.0 | Overall GPA: 3.87

EXPERIENCE

Data Analysis and Intelligent Systems (DAIS) | *Research Assistant*

Houston, TX | December 2023 – Current
- Contributed to and am directly involved with research in the field of intelligent systems under the mentorship of Dr. Christoph Eick.
- Received a national scholarship for my work, allowing me to do this research year-round.
- Engaged in rigorous experimentation, data analysis, and validation processes to ensure the credibility and reliability of research findings.
- Actively involved in drafting a paper for publication at the prestigious AAAI conference, showcasing the team's innovative contributions to the field.

Partners Real Estate | *Quality Assessment Specialist*

Houston, TX | May 2024 – August 2024 | Contract Hire
- Created robust web-app testing services using Java, SQL, MongoDB, and Vercel to test for errors or failures each time the developing team made a push to the app.
- Worked with a development team and a feedback group to integrate my testing feedback into the app as seamlessly as possible while meeting fast-paced deadlines.
- Implemented responsive design principles, ensuring optimal user interface across various devices.

University of Houston Knack Tutoring | *Computer Science Tutor*

Remote/Online | January 2023 – Current
- Facilitated virtual learning sessions, fostering collaboration and offering guidance on assignments and projects.
- Utilized effective teaching strategies to enhance student comprehension and received positive feedback for clear explanations and dedication.

PROJECTS

Lunar Horizon Dataset Augmentation | Individual | May 2024
Working through the DAIS research group and awarded with the UH Undergraduate Research Fund, I worked for months to fully develop, test, and publish a project that aimed to synthesize a large lunar horizon dataset. I semantically segmented around 3,500 images and trained a GAN model to learn the relationships between the labels and the images. I then used real lunar topography data to synthesize segmented images and artificially produce around 50,000 accurate lunar horizon images.

Reinforcement Learning Optimization | Team | March 2024
With a team of 3, I contributed to the development of a powerful SARSA/Q-Learning interactive model. Programmed in python, our system efficiently handled the complexities of a multi-agent simulated environment with independent agent learning policies. Our collective efforts resulted in a technically robust solution, allowing for experimentation to be easily completed with our fully customized PyQt5 GUI.

CERTIFICATIONS AND AWARDS

Advanced Accelerated Computing with CUDA C/C++ | *NVIDIA*

Generative AI with Diffusion Models | *NVIDIA*

Cybersecurity Essentials Certification | *IBM*

SURF Research Scholarship | *Summer Undergraduate Research Fellowship*

Eagle Scout | *Scouts BSA*

PUBLICATIONS AND RESEARCH

" An Investigation Into Synthesis of High-Fidelity Lunar Horizon Imagery Using Generative Models." In Progress.

PROFESSIONAL AFFILIATIONS

Association for Computing Machinery (ACM) | Member

Association for the Advancement of Artificial Intelligence (AAAI) | Member

COMPLETED COURSES

Programming for Artificial Intelligence

Software Engineering & Design

Operating Systems & Concurrent Processing

Data Structures and Algorithms

Digital Image Processing

LANGUAGES & COMPETENCIES

Python, Java, C++, Swift, C, HTML, CSS, Java Script, Visual Basic, Linux, Unix, R