

# SHEEL SHAH

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## EDUCATION

**Northern Virginia Community College (Dual Enrollment)**

**Sept 2021 - Present**

Associates Degree, Computer Science. **GPA: 4.0/4.0**

**Arlington Career Center - Arlington Tech High School**

**Sept 2021 – Present**

Advanced Studies Diploma. **GPA: 4.4079**

- Arlington Tech is a project-based learning high school program that prepares students for the workplace by teaching collaborative problem-solving through real world applicable projects.

## EXPERIENCE

**Database Intern:** [Stratus Technology Integration Services LLC](#)

**Aug 2024 – Present**

- As part of a high school Capstone program, working as a subcontractor of General Dynamics IT.
- Currently working on preparing a database of common security vulnerabilities.

**Software Developer:** [Sugar Labs](#)

**Jan 2022 – September 2023**

- Contributed to [MusicBlocks](#), an educational platform that introduces children to mathematics and computation through music.
- Used TypeScript to implement basic synthesizer support, enabling the playback of individual notes and groups of notes in scales.

**Research Assistant** | *Texas A&M University: Marine Biology*

**Sep 2022 – Nov 2023**

- Co-author in [published paper](#) in Marine Mammal Science Journal utilizes computer vision-assisted photogrammetry and three-dimensional modeling techniques to develop non-invasive methods for studying marine mammals.
- Developed a machine learning model to accurately measure dimensions of marine mammals from images, significantly advancing research in non-invasive methods for estimating the body mass of megafauna.

**Project Developer** | *Carnegie Mellon University: Heinz College*

**Jul 2023 – Aug 2023**

- Developed a dynamic AI-driven [Tic-tac-toe](#) grid using Monte Carlo Tree Search for a Carnegie Mellon master's course, earning accolades for advanced AI application and strong work ethic.

**ML Developer** | *Arjuna Solutions*

**Jun 2022 – Aug 2022**

- Developed multiple machine learning and AI models to refine fundraising strategies for nonprofit organizations, determining optimal donation requests and timing based on diverse datasets.
- Analyzed varied donor datasets at Arjuna Consulting, uncovering key correlations to guide strategic decision-making and enhance fundraising effectiveness.

## PROJECTS

**Object Detection Launcher**

**May 2024 – Present**

- Developing an automated targeting system using the YOLO algorithm, integrating multisensor data (depth, RGB, motion) for real-time servo adjustments and a pressurized oxygen launch mechanism.
- Interfaced system components, including all sensors, with a Raspberry Pi to calculate panning and servo adjustments for an automated targeting system using the YOLO algorithm.

**Lunar Terrain Visualization**

**Sep 2023 – Dec 2023**

Aim to visualize the darkside of the moon.

- Developed a 3D visualization of the moon's dark side by converting raw terrain data (latitude and longitude) into Cartesian coordinates, transforming these into PNG formats, and integrating with the Ursina game engine for dynamic rendering.
- Presented this project at PyCon 2024, showcasing its application to a professional audience of Python developers.

**Dijkstra Algorithm Implementation**

**Jun 2020**

- Programmed a [pathfinding algorithm](#) to determine the shortest paths in mazes, with functionality allowing users to dynamically adjust maze sizes.

## Fire alarm using Arduino

Jun 2021

Aim to build a comprehensive [fire alarm system](#), integrating fire detection with visual and auditory alerts.

- Designed and implemented a fire detection circuit using an Arduino as the central controller; incorporated a flame sensor for fire detection, a piezo buzzer for high-frequency sound emission, and an LED indicator for visual confirmation.

## TECHNICAL SKILLS

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- **Languages:** JavaScript, TypeScript, C, C++, Java, Python, HTML, CSS.
- **Tools & Frameworks:** Django Rest Framework, Git, GitHub, LaTeX, NumPy, Pandas, TensorFlow, Keras, Matplotlib, Seaborn, PyTorch, Pygame, DaVinci Resolve, Arduino, Raspberry Pi.

## EXTRACURRICULAR ACTIVITIES

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### High School Computer Science Club | Founder

Sep 2021-Present

- Founded and led a diverse coding club at my high school, aimed at participating in competitive coding events. Boosted student interest in computer science, leading to more enrollments in courses and participation in coding competitions.

### National Honor Society | Vice President

Mar 2024-Present

- Completed 25 service hours in 2024.
- Co-organizing Arlington Public School's inaugural High School Programming Contest in January 2025.

### Arlington Soccer Association | Leadership Council Member

Mar 2022 - Sept 2023

- Engaged with senior leadership to represent player perspectives, influencing club policies.
- Organized a 'Soccerthon' raising \$40,000, player clinics, and a safety awareness video addressing abuse and bullying of student referees.
- Soccer player since kindergarten, including travel soccer from 2014 through 2022.

### Recognition

- Speaker at [SETDA Leadership Summit and Ed Forum](#) – October 27-30, 2024 – Arlington, VA on Using Technology to Solve Community Problems
- Honor Roll, Arlington Public Schools, 2015 – 2024 (every year)
- 2nd place in Python Programming at the Wakefield Tech Expo, 2023
- Certificate of Completion from The AI Scholars Program by Inspirit AI, 2023
- [Featured](#) in a local news show (Arlington TV) in a video on Arlington Tech High School, November 2023
- [Featured](#) in an article titled “What Exactly is Arlington Tech” by the Arlington Magazine, December 2022
- Arlington Tech High School Technical Achievement Award for Dual Enrolled (DE) Computer Programming, 2021-2022 and 2022-2023
- Arlington Tech High School Academic Merit Award, Arlington Tech, 2021-2022
- 2nd place in The Northern Virginia Regional [Virtual Science & Engineering Fair](#) for Physics and Astronomy, 2020-2021
- Distinguished Achievement 3rd Place Award ([Science Fair](#)), Commissioned Officers' Association of the U.S. Public Health Service, 2020-2021

### Other

- Competitive table tennis player (rated 1,800).
- Table tennis camp counselor at Fairfax County, VA (August 2024)
- Guitar player since fourth grade.