# UZMA HAMID

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## EDUCATION

**Texas A&M University - College Station, TX** **May 2025**
*Bachelor's, Computer Science* *Major GPA: 4.0, Cumulative GPA: 3.8*

**Drake University, Des Moines, IA** **August 2021-December 2022**
*Bachelor's, Computer Science, Engineering and Data Analytics*

## PROFESSIONAL EXPERIENCE

**Pixel-Wise Annotation Tools for Semantic Segmentation** **Des Moines, IA**
*Student Research Assistant - Computer Vision* *January 2022 - January 2023*

- Led a Computer Vision research initiative focusing on image detection, object detection, and semantic segmentation, resulting in the development of a fine-grain annotation tool by utilizing **Python**, and **OpenCV** aimed to streamline the annotation process.
- Utilized libraries such as **PIL (Pillow),** NumPy, matplotlib, cv2 (OpenCV), and JSON in Python for data manipulation, image processing, and JSON data generation. Also, implemented algorithms for contour detection, polygon approximation, and image manipulation.
- Collaborated with Penn State University and presented research findings at the CCSC (Consortium Conference for Computing Science in College) in March 2022.

**Technology Services Texas A&M University, Drake University** **College Station, TX**
*Student Technician* *October 2021 - Present*

- Collaborate with 12 other student techs to successfully configure and deploy campus computers, enhancing technological accessibility for students and staff.
- Employ troubleshooting skills to address and resolve computer issues from students, faculty, and staff, achieving a high problem resolution rate.
- Provide on-call support, effectively responding to technical issues maintaining a rapid response, and providing onsite help when needed.

**MISSFIT: Magneto-Ionization Spacecraft Shield for Interplanetary Travel** **Des Moines, IA**
*Undergraduate Researcher – Physics* *November 2021 - December 2022*

- Focused on simulating how particles would react to different configurations of the spacecraft geometry and magnetic field.
- Developed and refined a **Monte Carlo** simulation method that significantly accelerated the testing process, reducing simulation time and enabling efficient exploration of multiple configurations.
- Developed a program to test different magnetic field configurations and strengths to improve understanding of how powerful shields would be needed to protect the crew from strong radiations.

## PROJECTS

**TableTop Segmentation**
*Lead Student*

- Led research in image segmentation of table-top objects using Graph Neural Networks.
- Developed and implemented a deep learning-based object grasping model, resulting in a 30% improvement in successful grasps by robotic systems.
- Successfully tested and trained OCID and OSD datasets, enhancing model robustness and contributing to a reduction in false positives during object recognition.

**Chip Visualization**
*Individual Project*

- Developed a Python program to identify image similarity utilizing deep neural networking and the cosine similarity metric, resulting in a streamlined method for finding the top 7 matching images.
- Utilized datasets and models including VGG, ResNet50, and AlexNet to enhance the accuracy of image similarity calculations. Libraries used include **Scipy**, **Glob**, **NumPy**, and **Matplotlib**.
- Implemented Metric Learning techniques in PyTorch, training a custom embedding model over 300 epochs to optimize image matching.

## TECHNICAL SKILLS

**Languages:** Python (Data Structure and Algorithm), Java/C++ (object-oriented language), JavaScript, HTML/CSS/PHP, R/SAS, MATLAB, Assembly
**Frameworks:** JUnit, PyTorch, TensorFlow, JavaFX
**Developer Tools:** Visual Studio Code, PyCharm, Eclipse, Sublime Text, Git, GitHub, GDB, Jupyter, Emacs
**Libraries:** NumPy, Matplotlib, TensorFlow, Tkinter, PIL, OpenCV

## ACHIEVEMENTS/LEADERSHIP

**Donald's VI Adams Leadership Institute**: Attained recognition among the top 5% of students, securing a spot in the esteemed leadership program.
**Aggie Coding Club** – Project Manager
**Dean's List** — Spring 2022 - Spring 2023
**International Student Association TAMU** – Marketing Officer