# Shreyas Bachiraju

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## Education

**Bachelor of Science in Informatics** | GPA: 3.94 | Dean's List | New American University Scholar — May 2026

*Arizona State University*

**Leadership**: Founding Co-President of CS + Social Good at ASU | Teaching Assistant for Advanced OOPs in Java

**Awards**: 1st Place **Winner of HackHarvard 2024** in Sustainability Track | 1st Place Winner of ESR Hackathon

**Relevant Coursework**: Data Structures and Algorithms | Deep Learning Structures | Advanced Object Oriented Programming | Natural Language Processing | Programming for Computer Engineering | Distributed Software Development | Artificial Intelligence

## Experience

**Research Intern** — September 2024 – Present

*Data Mining and Reinforcement Learning Lab at ASU*

- Researching Deep Neural Network model compression for autonomous systems on NVIDIA Jetson-powered edge devices as a part of the Fulton Undergraduate Research Initiative.
- Exploring dataset distillation through reinforcement learning techniques using Stable-Baselines3 and PyTorch.
- Conducting a case study on optimizing Origin/Destination Matrix using LLaMa LLM from HuggingFace for route efficiency in transportation planning.

**AI/ML Intern (Computer Vision)** — May 2024 – July 2024

*Netradyne*

- Conducted in-depth research and validation of state-of-the-art (SOTA) depth estimation models for Time to Collision (TTC) estimation with forward vehicles for Advanced Driver Assistance Systems (ADAS) using PyTorch.
- Developed an end-to-end automated pipeline using Python and AWS S3 to extract and process 30,000+ videos and execute model inference, reducing total processing time by 90%.
- Optimized the model inference time by 25% through batch inference and generated depth data for TTC proof of concept.
- Improved depth model accuracy by 15% through hyperparameter fine-tuning and lab experiments; generated depth data for 280,000+ images, integrating with YOLOv5 object detection model for depth prediction training.

**Software Engineer Intern** — June 2023 – July 2023

*Clocr Inc.*

- Programmed the integration of OpenAI LLM into the 'My-Legacy.ai' estate planning chatbot through Python and reduced LLM hallucinations associated with legal advice by 20% by fine-tuning LLM using custom knowledge bases.
- Directed data-driven A/B testing iterations and user feedback analysis to enhance chatbot's personalized recommendations; projected a 40% increase in user satisfaction based on user experience trials.

## Projects

**U-Plan - HackHarvard 2024 Winner in Sustainability Track** | *Python, SAM, Anthropic, Folium, Pandas, Rasterio, Geopy*

- Led a team of 4 and developed a platform analyzing urban heat, vegetation, and water coverage across 50+ Phoenix zip codes, achieving >90% accuracy using LANDSAT data, GIS tools, SAM segmentation, and Python.
- Engineered Python pipelines and interactive GIS visualizations to calculate environmental NDVI/LST/NDWI indices, providing targeted heat mitigation strategies and infrastructure recommendations through a chatbot using Anthropic API.

**Feal? Fake or Real Image**| *Python, PyTorch, Scikit-Learn, Matplotlib, Pandas*

- Achieved 97.3% accuracy in binary classification of real vs. AI-generated images by fine-tuning a ResNet-18 model with PyTorch on an augmented dataset enriched with 20% synthetic images generated by a custom Deep Convolutional GAN.
- Enhanced dataset diversity and improved model generalization by developing and training the custom DCGAN using Python and PyTorch, generating 10,000+ high-quality synthetic images to augment the CIFAKE dataset.

**Customer Churn Analysis** | *Python, Scikit-Learn, Pandas, Matplotlib, Seaborn*

- Developed a predictive churn model using the Random Forest algorithm with Scikit-Learn and Pandas, achieving over 80% accuracy by analyzing demographic data and customer behavior patterns.
- Translated data insights into strategic actions using Matplotlib to create correlation heatmaps and survival analysis plots, enhancing early engagement and boosting customer retention efforts.

**Automated Email Response Generator** | *Python, OpenAI API*

- Engineered an Automated Email Response System using Python and OpenAI API to generate personalized replies for content creators, reducing response time by 75% and increasing engagement rates by 25%.

## Technical Skills

**Languages**: Python, Java, C, C++, R, JavaScript, MySQL, HTML, CSS, MATLAB

**Frameworks/Tools**: PyTorch, Scikit-Learn, OpenCV, LLMs - HuggingFace, Node.JS, YOLOv5, Stable-Baselines3, Express.js