ESHAN IYER

Developer| Data Scientist | National Merit Finalist | Entrepreneur | Black Belt | GPA: 3.923
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Summary

- Conducted research and built an AI/ML solution leveraging **innovative Transformer technology** (*used by ChatGPT*) to provide **cross-view 3D computer vision to enable autonomous vehicle**
- Built an **Artificial Intelligence** product for **Fake News Detection** using TensorFlow/Keras and Sci-kit Learn libraries during the UT Dallas AI Bootcamp in the Summer of 2021. This project focused on **Natural Language Processing (NLP)** and analyzing news headlines to return a binary value of the validity of that headline.
- In-depth, hands-on experience in **Python and its libraries**, especially those about **data science**, and expert knowledge of Java and HTML.; **Proven leader** and leverage leadership skills to lead a team to deliver a project successfully
- Experienced in **deploying commercial digital/mobile capabilities**, including my website https://eshaniyer.tech.
- Strong **entrepreneurial skills** from **multiple startup and leadership experiences**

Skills

Artificial Intelligence | Computer Vision | Machine Learning | Python | TensorFlow/Sci-kit Learn
Web, HTML, CSS & Flask | Java | Leadership | Marketing | Business Development
Financial Planning | Budgeting | Business Operation | Fluent in English, Spanish and Tamil

Software Engineering Projects

AI Product - Self-Driving Vehicle - Cross-View CenterPoint https://eshaniyer.tech/cvcp **Jun 2023 - Sep 2023**

Implemented the innovative CVCP framework, a **groundbreaking approach to 3D object detection**, **combining Cross-View Transformers (CVT) and the CenterPoint object detection model**. This project significantly enhanced object detection accuracy and robustness by leveraging multi-camera systems to capture rich visual data from diverse perspectives. The CVCP framework addresses limitations in traditional methods, making it suitable for applications such as autonomous driving, robotics, and augmented reality. Led the team to develop and implement this cutting-edge solution, demonstrating computer vision and machine learning expertise. I am currently working on a paper to submit to the CVPR 2023 conference.

AI Product: Fake News Detection https://eshaniyer.tech/fake-news **Jun 2021 - Aug 2021**

This project utilized a **machine-learning model that uses natural language processing** to identify whether a headline or text is true or false. This model was created using the Scikit-Learn library to create a machine learning model that used the **Multinomial Naïve Bayes algorithm, which produced 90% accuracy on input data**. Finally, this project leveraged the Beautiful Soup library to scrape text from popular fact-checking websites to verify the algorithm's results**. Presented to professors at the University of Texas at Dallas at the end of the program and received high praise.**

AI Product - Climate Change Water Analyzer https://eshaniyer.tech/water-usage **Oct 2021**

This web app **helps combat the problem of wasteful water usage by creating a heatmap of places with high water use**. I used the Flask framework, which used HTML for the front end and Python for the back end. An HTML form took inputted data and placed it into an SQLite database. As a result of my efforts, my project placed third in a large pool of contestants.

Automobile E-Commerce Marketplace https://cars.eshaniyer.tech/ **Oct 2021**

I created an **automotive e-commerce digital channel** using HTML, CSS, and Markdown. The Jekyll framework created a dynamic and visually built adaptive client UX experience that effectively displayed the dealership's inventory and provided a simple car purchase interface. Led a team of coders and collaborated with partner team members to deliver a high-quality product by the deadline

Entrepreneurship Project - Kulfi Kream https://kulfi.eshaniyer.tech **Oct 2019**

Created a company that made premium, traditional, allergy-free desserts. **Gained an investment from the investor panel after the Young Entrepreneurs Academy** and maintained the business for several years. Utilized Search Engine Optimization and Google Business Profile to market my company to the world.

Course Grade Change Notifier and API https://eshaniyer.tech/hac-notifier **Oct 2021**

Leveraged Beautiful Soup and lxml Python libraries, integrated with the grade application, *leveraging student credentials to provide a single sign-on*. After the lxml library logged the current session into the portal, the Beautiful Soup library parsed through the HTML elements of the grade portal and stored the result in a variable. Utilized the Plyer library to send a desktop notification detailing whether a change in the user's grades occurred. I also developed this into a Python package that other developers can use.

Various Engineering Projects https://eshaniyer.tech/pltw **Aug 2021 - Present**

- Designed and created a cardboard chair with no tape that could hold a 200-pound person. The design was done using Autodesk Inventor. - 2021
- Created a puzzle cube toy using Autodesk Inventor that would be used to provide a fun experience for children in elementary school. - 2021
- Developed a hydrogen fuel cell mini car that could travel 10 meters in the shortest time on a full solar energy charge. - 2022
- Built and coded a robot elevator using VEX to move to each button pressed and then return to the ground floor. - 2022

Education

Frisco High School, Frisco, TX **2020 - 2024**

High School Diploma, Computer Science

The University of Texas at Dallas **Jun 2021 - Aug 2021**

Artificial Intelligence

Certificates

- **UT Dallas Internship on Autonomous driving at Pattern Discovery and Machine Learning Lab** certificate at https://eshaniyer.tech/assets/intern.pdf
- Spanish Certificate (https://eshaniyer.tech/assets/spanish-cert.pdf) Awarded to me for being an exemplary student in the **Spanish II** course.
- **UT Dallas 9 Week AI Bootcamp** (https://eshaniyer.tech/assets/ai-bootcamp.pdf) Certificate certifying my completion of the UT Dallas 9 Week AI Bootcamp.

Competitions

- **BPA State Competition**

  Qualified for the BPA State Competition in the SQL Fundamentals category in 2022.

- **Colin College Hackathon** (https://eshaniyer.tech/assets/ai-bootcamp.pdf)

  Participated with a team in the Collin College Hackathon, sponsored by Netscout, and earned 3rd place overall.

- **Academic Decathlon/Octathlon**

  I was on the Academic Decathlon and Octathlon teams in 2021 and 2022. I have won many medals in the subjects of Math and Social Science in various competitions

- **Class Coding Competition** (https://eshaniyer.tech/assets/class-certificate.pdf) Awarded November 5, 2021, for winning a Java coding challenge competition.

Other

Recommendation Letter https://eshaniyer.tech/assets/utd-letter.pdf

Earned a recommendation letter from UT Dallas professors Dr. Jey Veerasamy and Dr. Anurag Nagar concerning my Machine Learning/Computer Science skills after the 9-week boot camp at UT Dallas, where I created a fake news detection program.

Extra-Curricular Activities

- **Taekwondo Blackbelt - Frisco TX** https://trmafrisco.com/

  Awarded with **Blackbelt** in Taekwondo from three years of practice in demonstrating leadership, perseverance; Won many medals in various competitions at the district level

- **Competitive Swimming Team – Richmond, VA** https://novaswim.org/

  Part of competitive swimming in Nova Swim Club – **US Olympic-grade swim club** and won various swim competition at district and division level during 2010-2020 period. **Won medals in various swimming strokes at the division level for the age group at veracity level**

Work Experience

Jun 2023 - Jul 2023

Research Assistant, The University of Texas at Dallas
Worked on Cross-View Transformer for Bird's Eye View Semantic Segmentation for Autonomous Driving at the University of Texas at Dallas as a summer intern

Chief Executive Officer, Kulfi Kream, Frisco, TX **Aug 2019 - Dec 2020**

Founded Kulfi Kream, a dessert business catering to nut and gluten allergies. Secured City food handling permit and established a genuine business enterprise. Build a business case and marketing plan and hire operational staff. Profitability reached in 4 months.

Teaching Assistant, Kumon North America, Inc., Frisco, TX **Aug 2021 - Present**

Assisted students in accelerating their academics. I had various roles in the organization – I started as a grader and was promoted to instructor in 6 months. Appreciated by the CEO of the business as the most reliable and trustworthy

Private Tutor, Self-Employed, Frisco, TX **Nov 2022 –Present**

Worked with students to enhance their learning and was highly sought out by multiple community members

Volunteer, National Honor Society, Frisco, TX **May 2022 –Present**

Contributed to various volunteer activities and invested time in communities to improve learning and development.

Volunteer Member, National Association of Secondary School Principals (NASSP) **Apr 2019 -May 2022**

Business Student, Young Entrepreneurs Academy, Inc., Frisco, TX **Sep 2019 - Mar 2020**

One of the top 20 students selected Young Entrepreneurs Academy to launch a company through the program where Frisco Chamber of Commerce supported with subject matter expertise with government and private sector, including several business owners, financial professionals, digital markets, and various community members.

DEPARTMENT OF COMPUTER SCIENCE
THE UNIVERSITY OF TEXAS AT DALLAS

September 20, 2021

Certificate of Achievement

We are thrilled to recognize **Eshan Iyer** for completing advanced level deep-dive *Artificial Intelligence workshop* conducted online from June 7 to August 6, 2021 by the University of Texas at Dallas Computer Science department. We covered the following topics in this nine-week intensive workshop with lectures & hands-on assignments on all weekdays:

Python programming, tools for data analysis such as numpy, pandas, graphics, various file formats, loading into data frames and performing basic statistical operations, introduction to machine learning, with examples and real-life scenarios. AI/ML model building – decision trees, neural networks, etc., Deep Neural Nets using TensorFlow, Convolution Neural Nets (CNN) and Recursive Neural Nets (RNN), Model Evaluation – accuracy, error, ROC curve.

Eshan applied the knowledge gained in this workshop and completed a project titled **Fake News Detection with NLP** in the final weeks of this workshop. He also did an impressive demo & presentation in the final week. In summary, Eshan exhibited very strong technical skills and soft skills in this camp. Based on this camp, we are confident that he will be very successful in both graduate education & professional career. We wish him all the best!

Dr. Anurag Nagar
CS faculty & Lead Instructor

Dr. Jey Veerasamy
Director of Center for CS Education & Outreach

Dr. Dung Huynh
CS Department Head

Viswas Bethapudi
Instructor #2 & CS graduate student

Sai Yoshitha Gali
Instructor #3 & CS graduate student

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50 YEARS
Department of
COMPUTER
SCIENCE
THE UNIVERSITY OF TEXAS AT DALLAS
StateFarm
ESHAN RAJESH IYER
is recognized for completing Summer Research Internship in
PATTERN DISCOVERY AND MACHINE LEARNING
LAB
June 5 – July 28, 2023
Prof. John Cole
Assoc. Director,
CS Outreach
Dr. Jey Veerasamy
Director, CS Outreach
Dr. Ovidiu Daescu
CS Dept. head