KHUSHI NAIK

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https://naikkhushi21.github.io/Portfolio-Website/

EDUCATION

University of Southern California   Los Angeles, California
Master of Science in Computer Science (GPA: 3.55)   August 2023-May 2025
Coursework: Foundations of Artificial Intelligence, Machine Learning, Analysis of Algorithms, Natural Language Processing, Advanced Computer Vision, Advanced Mobile Devices and Game Console, Deep Learning

Pandit Deendayal Energy University   Gandhinagar, Gujarat
Bachelor of Technology in Information and Communication Technology (GPA: 9.7)   August 2019-May 2023
Coursework: Data Structures and Algorithms, Object Oriented Concepts and Programming, Database Management Systems, Computer Organization and Design, Operating System, Probability and Statistics for Statistics for Data Science, AI Systems, Embedded Systems, Computer Communication and Networking, Machine Learning, Cloud Architecture and Services, Internet of Things, Digital CMOS VLSI Circuits, Computer Vision, Big Data Analytics and Computing

SKILLS

Programming: C, Python, Java, HTML, JavaScript, C#, C++
Tools and Technologies: Unity, Pandas, TensorFlow, Keras, NLTK, Scikit-Learn, CSS, MySQL, DBMS, Docker, IoT, OpenCV, Web Development, Digital Signal Processing, RaspberryPi, Git, Google AppScript, React.js, Azure, AWS
Artificial Intelligence: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Calculus, Statistics, Reinforcement Learning, POMDP, Large Language Models, PyTorch, NumPy, Pandas

WORK EXPERIENCE

Course Grader (CSCI 526 Advanced Mobile devices and Game Console)   January 2024-Present
- Collaborate with the professor to manage the class and oversee the progress of assigned team projects.
- Provide constructive feedback on game design and development progress.
- Evaluate and graded game design documents and group presentations for assigned teams.

C# Developer for Digital Fabrication Project   September 2024-Present
- Develop an AR Sandbox to visualize depth image data in Rhino using the Orbbec Femto Bolt camera and C#, supporting architectural projects.
- Create an automated USCard Access System with Google AppScript to streamline student access management.

Avalon Aerospace   Compton, California
Machine Learning Engineer   May 2024-August 2024
- Calibrated a machine vision system with FANUC robot M-710iC for automated picking and placing of machined parts.
- Implemented machine learning techniques to detect post-production defects in CNC-machined parts using Coral Dev Board.
- Built a region-specific human detection system with Raspberry Pi 5 to trigger alarms if activity in FANUC robot's operating zone.
- Developed a Windows Forms Application in C# for re-annotating false-positive defect detections.

TalentServe   Mumbai, Maharashtra
AI/ML Engineer and General Management Intern   May 2022-July 2022
- Constructed a model to sort out resumes for company deploying Machine Learning algorithms
- Utilized Support Vector Machine and improved its efficiency

ACADEMIC PROJECTS

Game Development (https://csci-526.github.io/csci526-fall24-friday-main-hue-crew/Gold_Build/)   August 2024-December 2024
- Flip the Hue – Developed a Unity and C# game with an innovative color-matching mechanic, managing project workflow with Git for version control and collaboration
- Dye Hard – Conceptualized, and built a Unity and C# game, incorporating user feedback to refine gameplay and design

Skin Cancer Detection using DL and Credibility Assessment using XAI   August 2023-December 2023
- Early detection of skin cancer using CNN, ResNet50, InceptionResNetv2, and VGG16
- Compared models using confusion matrices as well as validation accuracy, loss, recall, and ROC-AUC graphs
- Evaluated model's credibility using SHAP (SHapely Additive exPlanations) framework

Automated Drowsiness Detection in Car Drivers   December 2022-May 2023
- Processed video dataset, worked with facial landmarks and normalization to fit the models for different individuals
- Built a model to detect fatigue in car drivers and send alerts in real-time to avoid/reduce road accidents
- Configured the best performing algorithm(MLP) to develop a real-time drowsiness detector with IoT

PUBLICATIONS

Automated Drowsiness Detection using Machine Intelligence Techniques (https://ieeexplore.ieee.org/document/10263966)
Automated Drowsiness Detection for Driver Safety: A Deep Learning-based Approach (https://ieeexplore.ieee.org/document/10183506)
IoT Technologies in Smart Environment: Security Issues and Future Enhancements(https://link.springer.com/10.1007/s11356-022-20132-1)