ABIR DAS

+82 01097831929 · Addyabir111@gmail.com . linkedin://abir-das-0042b1275
Github://AbirDas-5151 . 96-4, Jayang-Dong, Daejeon, South Korea, 34515

ABOUT ME

I am an AI Engineer with hands-on experience developing cutting-edge solutions in computer vision, natural language processing, and deep learning. Passionate about solving real-world challenges, I thrive on creating scalable AI models and deploying them using advanced tools like TensorFlow, PyTorch, and AWS SageMaker. With a strong foundation in algorithm development and a keen interest in exploring robotics and explainable AI, I am eager to contribute to impactful projects that push the boundaries of artificial intelligence.

WORK EXPERIENCE

NINANO Company Inc **(Sep 2024 - Dec 2024)**
Head. 2F, 315-11, Hyeoksin-ro, Gimcheon-si, Gyeongsangbuk-do, Republic of Korea.
AI Software Developer Intern

Accomplishments:

- **Developed an Advanced Stereo Vision System:** Built a stereo vision solution using MIDAS and SGBM deep learning algorithms from scratch, enabling obstacle detection within 6 meters and ensuring safe drone operation at a consistent height of 10 meters.
- **Integrated Object Detection and Safety Mechanisms:** Implemented YOLO for real-time object detection and integrated it with the drone's flight controller, enabling autonomous safety braking and operator notifications.
- **Developed Autonomous Recovery System:** Designed an algorithm for transitioning the drone between brake and loiter modes, ensuring seamless mission continuity.
- **Key Technologies:** MIDAS, SGBM, YOLO, Python, PX4 Autopilot, OpenCV, Raspberry Pi

Sub-Project:

Enhanced Gimbal Camera Functionality: Modified YOLO- based object detection algorithms for a drone-mounted gimbal camera to autonomously track a designated target while simultaneously identifying other objects within the frame.
Key Technologies: YOLO (You Only Look Once), Python, Computer Vision, Gimbal Control Systems.

SpaceK **(Dec 2022 - Jan 2023)**
Chungnam National University Start-up Support Center,160 Techno 2-ro, Yuseong- gu, Daejeon, Republic of Korea.

Embedded Systems Intern

Accomplishments:

- Designed and implemented embedded software solutions for satellite communication systems, improving data transmission efficiency by 20% and enhancing control reliability.
- Developed microcontroller-based solutions using Embedded Linux, UART, I2C, and SPI protocols to streamline satellite communication processes.

EDUCATION

Woosong University, South Korea **March 2021 - February 2025**
Bachelor of Science in Artificial Intelligence - 3.83 - 4.5 / 85.11%

Siliguri Government Polytechnic, India **August 2016 - July 2019**
Diploma in Electronics & Instrumentation Engineering - 70%

Kanchrapara Harnett High School **January 2011 - March 2016**
High School - 79%

PROJECTS

- **Object Detection (52-Card Deck):** Built a machine learning model using OpenCV and Python to identify and classify cards from a standard deck in real-time, achieving 98% accuracy.
- **JCFS Assistant Chatbot:** Designed and deployed a department assistant chatbot using Flask and Google NLP API, enabling automated query resolution and reducing administrative workload by 50%. Integrated sentiment analysis to prioritize student issues.
- **Car-Parking Occupancy Detection:** Developed a computer vision-based parking occupancy detection system using OpenCV and YOLO, achieving 90% accuracy in real-time monitoring.
- **Boston House Data Visualization:** Designed a Tableau dashboard with AI-driven clustering algorithms to analyze housing trends and predict prices.
- **Facial Expression Recognition:** Built a deep learning model using TensorFlow and Python, achieving 92% accuracy in detecting human emotions across seven categories.
- **Train and Deploy a Machine Learning Model:** Developed and deployed a scalable machine learning model on AWS SageMaker, reducing model training time by 40%.
- **SeoulSpotlight Website:** Launched an SEO-optimized WIX website showcasing Seoul's cultural attractions, driving over 1,000 monthly visits.

SKILLS & EXPERTISE

Languages: Python, SQL, Flask
Frameworks & Libraries: TensorFlow, PyTorch, scikit-learn, OpenCV, Keras, CUDA
Specialized Tools: Roboflow, Google NLP API, AWS SageMaker, Raspberry Pi 5, Anaconda, MiniConda, Dialogflow.
Techniques:

- Deep Learning (CNNs, RNNs, Transfer Learning, YOLO for Object Detection)
- Natural Language Processing (Sentiment Analysis, Tokenization, Chatbots)
- Computer Vision (SGBM, MIDAS, Stereo Vision, Image Classification, Object Detection)
- Model Evaluation & Optimization (Cross-validation, Hyperparameter Tuning)
- Clustering & Classification (K-Means, Decision Trees, Random Forests)

Libraries & Tools: Pandas, Numpy, Matplotlib, Seaborn, SPSS, GitHub, Flask, WIX.
Platforms: Tableau, Google Colab, Jupyter Notebooks.
Deployment: AWS SageMaker, Flask APIs.

CERTIFICATIONS

- **Digital Accounting Transformation** – Partnership of Asian Management School
- **Python** – Partnership of Asian Management School
- **Python Programming** – Microsoft, Kolkata (Aug 2019)
- **Software Application Developing** – IIT Kharagpur (Nov 2019)
- **Data Visualization** – Partnership of Asian Management School
- **UX Design** – Partnership of Asian Management School
- **Elice Game Development in Python** – Korea

PUBLICATIONS

- **Machine Fault Diagnosis Using Sensors Data and Explainable AI Techniques** – Published in SCIE Journal (CMC) - https://www.techscience.com/cmc/v80n3/57907
- **Advanced Machine Learning Models for Motor Imagery Analysis in Brain-Computer Interfaces** – Expected publication in Springer Nature Scientific Reports (March 2025 - Under Review)