KUSHAL SAI GALIPALLY

Philadelphia, PA, USA | kg3332@drexel.edu | +1 (267) 815-3434 | Portfolio | LinkedIn | Medium Profile | GitHub

EXPERIENCE

Expleo Solutions, Bengaluru, India **Apr 2023 – Nov 2023**

Engineer - Aerospace

- Predicted maintenance cycles and component life for Airbus A320 series aircraft wings using advanced **data analysis techniques** and **machine learning algorithms**, optimizing structural integrity, automating **predictive maintenance** workflows, and reducing manual effort.
- Utilized ISAMI and CATIA for fatigue life estimation, enabling design changes for Airbus wings, ensuring safety compliance and structural integrity.

Redon Systems, Hyderabad, **Mar 2021 – Mar 2023**

Design Engineer

- Led the development of **AI-driven surveillance drones** with **advanced computer vision** and mechanical design, optimizing algorithms through rigorous testing to improve surveillance capabilities.
- Utilized **TensorFlow and OpenCV** for developing and deploying robust computer vision models. Integrated the **YOLO** (You Only Look Once) algorithm for efficient real-time object detection, reducing false positive **rates by 25%** and ensuring faster processing times. Enhanced **object detection** and tracking capabilities through **data augmentation and transfer learning techniques**, further increasing model accuracy.
- Developed a tandem-wing UAV with an innovative composite structure, integrating advanced **object detection** and tracking via **computer vision** to **autonomously navigate** and utilize its 1.5 kg payload effectively.
- Collaborated in interdisciplinary teams to integrate machine learning insights into practical solutions like **Autonomous UAV Detection Systems.** Conducted comprehensive system performance testing, optimizing algorithms, and hardware configurations to meet stringent operational criteria.
- Executed trade off & research studies using **regression models** to analyze and predict optimal material configurations under various load conditions which led to **20% weight reduction** in the UAV.
- Enhanced UAV aerodynamics, resulting in **a 10% increase in flight time**, by utilizing carbon fiber composites, SolidWorks design, and Nastran/Ansys strength optimization.

Acuvate Software, Hyderabad, India **Dec 2020 – Feb 2021**

Software Engineer

- Developed expertise in Azure and C#, focusing on database management including tables, procedures, and triggers using SQL.
- Created an e-commerce website with Microsoft Visual Studio, C#, JavaScript, and SQL, implementing the frontend using CSS.

EDUCATION

Drexel University, Philadelphia, USA | **Masters in Machine Learning Engineering** **Jan 2024 – Sep 2025**
National Institute of Technology Warangal, E&ICT | **Post Graduate in AI & ML** **Feb 2020 – Feb 2021**
GITAM University, School of Technology | **Bachelors in Aerospace Engineering** **Jul 2016 – Aug 2020**

CERTIFICATIONS

Supervised Machine Learning Certification - **Stanford Online** - Verification
Advanced Learning Algorithms Certification – **Stanford Online** - Verification

COMPETENCIES

Programming Skills: Python (Pandas, NumPy, Sci-kit learn, PULP, TensorFlow, PyTorch, Matplotlib, Seaborn), SQL, C#
Machine Learning: Supervised, Unsuper Vised Learning, Optimization, Classification, Regression, Regularization, KNN, SVM, Naïve Bayes, Decision Tree, Random Forest, Natural Language Processing
Deep Learning: ANN, CNN, RNN, LSTM, GAN, Transformers
Tools: Jupyter Notebook, Visual Studio Code, Google Cloud, Google Colab
Soft Skills: MS Office Products, Leadership, Cross Functional Team Work
Other Skills: ANSYS Fluent & Mech APDL, Siemens Flow, SolidWorks, AutoCAD, Catia, Nastran

PROJECTS

Classification of Images Birds Vs Squirrels: Built a Neural Network model using **EfficientNetB3** – Image Net transfer learning and Adam optimizer to classify bird vs. squirrel images, achieving a **65 percent accuracy rate** in classification with introduction of Data Augmentation using TFRecords Dataset.

UAE Used Car Prediction Model: Analysed and cleaned UAE auto sales data, using **Matplotlib** and **Seaborn** for visualization; applied preprocessing techniques like **normalization** and **standardization**, resulting in a 92% accuracy rate for predicting car prices based on different parameters like brand, age, colour etc, thereby enhancing strategic decision-making in auto sales by 15%. (GitHub Link)

Cab Booking Prediction: Optimized cab booking prediction using advanced techniques like **Random Forest Regression**, yielding an R-squared score of 0.888, enhanced by **insightful data visualization** using **EDA Techniques** (GitHub Link)

PUBLICATIONS

- Use of Machine Learning for Continuous Improvement and Handling Multi-Dimensional Data in Service Sector
  - Increased labour productivity by over 30% across developed countries within 15 years - Link
- Analysis of High Entropy Alloys for Aerospace Applications – Published in Thai Journal of Nano Science and Nano Technology - Link