# BIKASH GURUNG

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## PROFESSIONAL SUMMARY

Accomplished AI and Computer Science specialist, graduating with distinction from Liverpool John Moores University and holding a strong B. Tech in Computer Science from Lovely Professional University. Specialized in Machine Learning and Deep Learning, I bring a blend of academic excellence and practical experience. My expertise spans from developing advanced ML models and DL applications to executing intricate EDA/ETL and statistical analysis. Proficient in a diverse range of programming languages and tools such as Python, R, TensorFlow, and Sklearn, I have honed my skills in full-stack development, project management, and collaborative leadership through roles at SHL and Cognizant. With certifications in key AI and ML areas, I am an innovative problem-solver eager to drive impactful solutions in data science. My goal is to bring exceptional value to the team, overcoming any barriers with a portfolio that stands out, and showcasing my commitment and capabilities in AI and data science.

## CORE QUALIFICATIONS

- **Machine Learning & Deep Learning**: Proficient in state-of-the-art algorithms and techniques in machine learning and deep learning, including both theoretical understanding and practical applications.
- **Python & Data Analysis Libraries (NumPy, Pandas, Matplotlib, Seaborn)**: Skilled in Python programming, particularly for data science tasks. Extensive experience with key Python libraries such as NumPy for numerical computations, Pandas for data manipulation, and Matplotlib & Seaborn for data visualization.
- **Statistical Analysis & Hypothesis Testing**: Strong foundation in statistical methods and hypothesis testing, crucial for data-driven decision-making and interpreting complex datasets.
- **TensorFlow & Sklearn**: Proficient in TensorFlow for building and training machine learning models, and Sklearn for implementing various machine learning algorithms effectively.

## AREAS OF EXPERTISE

Machine Learning Implementation | Deep Learning Algorithms | Data Analytics & Visualization | Statistical Modeling & Inference | Hypothesis Testing & Data Interpretation | Python Programming Proficiency | Advanced Data Preprocessing | AI Model Development & Optimization | Neural Network Architecture | Collaborative Project Management | Cross-functional Team Leadership | Strategic Data Insights Generation

## TECHNICAL SKILLS

- **Programming Languages:** Python | R | C | C++ | Java | HTML | JavaScript | CSS | MySQL
- **ML:** TensorFlow | Apache Spark | Scikit-learn (sklearn) | RAPIDS | Flask | NumPy | Pandas | Matplotlib | Seaborn
- **Tools:** MLFlow | Docker | GCP (Google Cloud Platform) | Bootstrap | WordPress | GIT | VSCode (Visual Studio Code)

## WORK HISTORY

**Management Trainee**, **SHL** – Gurugram, India, 09/2019 - 04/2021

- Conducted extensive research to design assessment blueprints and test items, aligning them with client requirements, thereby ensuring the development of high-quality computer science assessments.
- Leveraged advanced Excel functionalities and CSV data files to meticulously analyze and manipulate large datasets, guaranteeing the provision of accurate and reliable data for subsequent analysis and reporting.
- Achieved code accuracy through rigorous testing on relevant platforms and conducted thorough translation reviews, resulting in flawless code deployment.
- Spearheaded comprehensive training meetings and conducted workload assessments for newly hired employees, following the company's best practices, leading to a remarkable 33% increase in team productivity.
- Elevated the quality of modules by actively collaborating with external subject matter experts in niche IT skills, resulting in significantly improved assessment accuracy and heightened client satisfaction levels.
- Ensured the integrity and security of data through meticulous management and adherence to best practices in data handling and privacy, contributing to the company's reputation for reliability and trustworthiness.
- Skilled in creating comprehensive technical documentation and reports, effectively communicating complex concepts and results to stakeholders, and aiding in strategic decision-making.
- Identified and implemented process improvements, leveraging technology and innovative methods to streamline workflow, enhance efficiency, and reduce operational costs.

**Programmer Analyst Trainee – Internship**, **Cognizant** – Pune, India, 01/2019 - 04/2019

- Demonstrated practical proficiency in full-stack development through the successful completion of a demanding internship, translating classroom knowledge into effective real-world applications.
- Collaborated seamlessly with cross-functional teams, including developers, business analysts, and project managers, to orchestrate the achievement of project deadlines and objectives, ensuring the seamless execution of tasks.

- Spearheaded the development and rigorous testing of novel website features and functionalities, taking charge of creating and executing comprehensive test cases, adeptly debugging code, and swiftly implementing improvements based on feedback.
- Applied hands-on expertise to drive the enhancement of website features and functions, actively participating in the identification of areas for improvement, troubleshooting issues, and implementing necessary adjustments for optimal performance and user experience.
- Focused on optimizing user experience by implementing responsive design and user-friendly interfaces, significantly improving client engagement and satisfaction.
- Actively participated in Agile and Scrum practices, contributing to the team's ability to rapidly adapt to changes and deliver high-quality solutions in a dynamic environment.

## PROJECTS

**Bird Species Detection Web Application**

- Developed an application for identifying three distinct bird species using advanced object detection models: Faster R-CNN and SSD MobileNet.
- Annotated a dataset of 2,400 images (800 per species) utilizing ReNomTAG, ensuring precise model training.
- Leveraged TensorBoard for effective visualization and evaluation of model performance.
- Engineered a responsive web application using Flask, integrating TensorFlow Serving with Docker for model inference, facilitated through gRPC communication protocol.

**Environment Sound Classification**

- Engineered a machine learning model to classify environmental sounds, employing Multi-Layer Perceptron (MLP) and benchmarking it against a Random Forest algorithm.
- Utilized Librosa with Mel-Frequency Cepstral Coefficients (MFCC) for robust data analysis and feature extraction from a dataset of 8,732 short audio files, categorized into 10 distinct classes.
- Achieved a significant accuracy milestone with the MLP model at 92.73%, compared to 61.11% with the Random Forest model.

**Higgs Boson Detector**

- Focused on detecting signals indicative of the Higgs boson using both Random Forest and XGBoost models.
- Implemented model training on GPU using CUDA with RAPIDS framework, and compared performance with CPU-based executions.
- Documented a slight edge in accuracy for CPU over GPU in both Random Forest (74.05% vs 74.02%) and XGBoost models (83.45% vs 83.30%).
- Notably, GPU executions demonstrated superior efficiency, with training times 177 times faster in Random Forest and 300 times faster in XGBoost than their CPU counterparts.

## CERTIFICATIONS

- Production Machine Learning Systems – Coursera
- How Google does Machine Learning – Coursera
- Learn Python 3 Course – Codecademy
- Structuring Machine Learning Projects – Coursera
- JavaScript: Understanding the weird parts – Udemy

## EDUCATION

**Liverpool John Moores University: MSc. Artificial Intelligence (Grade – Distinction),** Liverpool, United Kingdom, 09/2021 – 03/2023

- **Key Modules:** Machine Learning, Deep Learning, Accelerated Machine Learning, Enterprise Machine Learning, and Advanced Topics in Deep Learning.
- **Dissertation:** Conducted a comprehensive MSc dissertation focusing on football player analysis utilizing unsupervised learning techniques, including Density-Based Spatial Clustering of Applications with Noise (DBSCAN) and K-Means Clustering.
- **Technical Proficiency:** Acquired mastery in state-of-the-art (SOTA) algorithms within the fields of machine learning and data science.
- **Development and Deployment:** Skilled in designing, developing, deploying, and managing sophisticated machine learning models, including those in computer vision and natural language processing (NLP).
- **Data Analysis:** Proficient in executing Exploratory Data Analysis (EDA) and Extract, Transform, Load (ETL) processes, along with conducting detailed statistical analysis and hypothesis testing on both tabular and unstructured data sets.

**Lovely Professional University: B. Tech Computer Science and Engineering (Grade – 2:1),** Punjab, India, 08/2015 – 05/2019

- **Key Modules:** Object Oriented Programming, Data Structures and Algorithms, Database Management System, Python Programming, Discrete Mathematics, Probability and Statistics

## REFERENCES

**Available Upon Request**