Shivansh Srivastav

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PROFESSIONAL SUMMARY

Data Scientist with experience in building data-intensive applications with proficiency in AI and, neural architectures such as CNNs, RNNs, Encoder-Decoders, and generative models including GANs and GPT. Hands-on experience with Cloud platforms, especially AWS, and Azure, and adeptness with Container orchestration tools like Docker and Kubernetes. Acquaintance with agile development practices and worked on version control utilities, such as Git, and GitHub. Mastery of programming languages, notably Python, C++ and Java with Stellar communication and presentation abilities.

EDUCATION

Master of Computer Applications, Major in Artificial Intelligence | Jain University, Bengaluru 2021 – 2023

Bachelor of Computer Applications, Major in Information Technology | VSICS College, Kanpur 2017 – 2020

- **Honors & Awards:** Top 2% in Master's degree with excellent project award
- **Coursework:**
  - BCA: Programming, Computer System & Networking, Information Technology, Project Management
  - MCA: Programming, Cloud, Machine Learning, Artificial Intelligence, Management and Leadership

RESEARCH EXPERIENCE

- Focused on building automated solutions and products with artificial intelligence, robotics and deep learning models tailored for manufacturing and healthcare sectors.
- Designed graph deep neural architecture-based knowledge graphs for processing candidates of an interview by a video chatbot that has the capabilities to conduct interviews on its own.
- Contributed as a mentor on The Linux Foundation for ongoing and short-period research projects by funding organizations as Cloud native, Hyperledger and mentorship organizations as CCNF and DDENT.
- Conducted in-depth research and co-authored findings on Hyperledger AI Llm chatbot Gui implementation and KubeEdge Elastic inference for deep learning models with other mentors and funding organizations.
- Pioneered the design of novel graph-based scene representations and GNN architectures, integrating attention mechanisms for efficient object navigation in large-scale, dynamic indoor environments.
- Established the benchmark for interactive navigation in knowledge-based deep architecture and designed a novel evaluation metric with Deep Learning-Based Side Channel Analysis and Comparison of User Studies F-Score that balances path efficiency and guides for traversing.

SKILLS

Data Science/Machine Learning/Deep Learning: Python, Data Visualization, Feature Engineering, Supervised and Unsupervised ML algorithms, BERT, Transformers, LSTM, CNN, RNN, GANs, Neural Networks, Computer Vision, PIL, EDA, Feature Selection, A/B testing, Data Augmentation, Distributed Model Training, Stochastic Gradient Descent (SGD), Adam, AdamW, FSDP, Deepspeed Zero

Mathematics for ML & DL: Linear Algebra, Probability, Advanced Statistics, Calculus, Matrices

Python Packages & Frameworks: Scikit-learn, TensorFlow, PyTorch, NumPy, Pandas, SciPy, Keras, Beautiful Soup, PySpark, OpenCV, Pillow

MLOps Tools: CI/CD, DVC, MLflow, Tf-extended, Jenkins

Programming Languages: Python, C, C++, JavaScript

Databases: MySQL, MongoDB, PostgreSQL, Redis, Milvus, Neo4j, SQL, NoSQL

Cloud Deployment: AWS, Azure, AWS EC2 and S3, Heroku, Text-to-Speech and Speech-to-Text services.

WORK EXPERIENCE

May 2024 – Present

AI Engineer | Neural Niti | Delhi, INDIA

- Led high-impact projects in the healthcare, management and Automotive industries utilizing AI for Automotive Factory digitalization and automation, designed products for US and International market for Hospitals.
- Managed a team of professionals, overseeing research, data analytics, and advancing projects from initial concept to development, resulting in a 25% improvement in project efficiency and 60% more investment.

Sep 2022 – Apr 2024

Open-Source Developer | PyTorch | Delhi, INDIA

- Integrated self-attention graph pooling, dense GCN layers, and edge weighting into Graph Convolutional layers, enhancing image classification capabilities and used the Torchvision and Optim frameworks.
- Ported GPU efficient model, and implemented transformation for images.
- Performed unit tests to ensure correctness, and fixed multiple bugs and issues within community norms.

Feb 2021 – Apr 2021

Technical and Data Analyst | 1k Entrepreneurs | Bengaluru, INDIA

- Maximized the processing speed of the website by 30% using analytical plugins.
- Envisioned a 5-member cross-functional team of TiE Bangalore to format unstructured data, analyzed data to provide valuable insights and market trend analytics.
- Produced a suite of meaningful reports to help Directors make important decisions, and mentored new interns to increase productivity by 18%.

Jul 2019 – Jun 2020

Software Engineer | CamelCoders | Kanpur, INDIA

- Architected and launched e-commerce websites and application software tailored to user requirements, improving user engagement by 25% through optimized UI/UX design and responsive features.
- Engineered and optimized inventory management software, including GST invoice billing, resulting in a 30% reduction in processing time and a 15% increase in overall system efficiency.
- Led the development of college administration management software, utilizing PHP, CodeIgniter, and SQL to implement robust CRUD features, enhancing data integrity and boosting system reliability by 20%.

PROJECTS

Automated HRM with Video Interview Platform **Project Report**

Project Brief:

- Developed an automated HRM system integrating a video interview platform to streamline candidate assessment resulting in a 40% reduction in recruitment time and a 30% increase in assessment accuracy.

Results/Deliverables:

- Reduced recruitment time by 40% using advanced analytics, with Milvus DB for fast similarity searches and AWS cloud for scalable infrastructure.
- Increased assessment accuracy by 30% by integrating machine learning algorithms and leveraging Llama for prompt engineering, and employing computer vision techniques for Resume parsing.
- Developed a robust video interview platform with Backend development, AWS, and advanced APIs, utilizing text-to-speech and speech-to-text technologies for enhanced candidate interaction.
- Streamlined interview scheduling and coordination by developing an automated system that integrates calendar APIs and real-time notifications, reducing scheduling conflicts by 25% and improving candidate experience.

Adversarial and Unsupervised Learning for Biologically Plausible Vision Networks **Project Report**

Project Brief:

- Goal of the project is to Combining adversarial training and unsupervised learning in vision foundation models to build more biologically plausible vision neural networks.

Results/Deliverables:

- Elevated model precision by 20%, integrating adversarial training with unsupervised learning to refine feature representation and generalization.
- Engineered a biologically inspired vision framework that surpasses conventional models in real-world object recognition, demonstrating superior performance in both accuracy and robustness.
- Fortified network resilience, achieving a 30% reduction in adversarial vulnerability and error rates across complex visual datasets.
- Identified that Token Masking outperforms traditional Image Masking in ViT-based encoders, while adding FD loss or HRDA leads to a decrease in mIoU, suggesting these components may be redundant in the final VFM-UDA method.

Credit Assessment for Predicting Defaulters **Project Report**

Project Brief:

- Analyzed and processed the American Express dataset to prioritize applications, accurately predicting healthy customers (0) and potential defaulters (1).

Results/Deliverables:

- Conducted clustering, k-fold cross-validation, and autoencoder-based anomaly detection to preprocess and enhance data quality for credit risk analysis.
- Implemented advanced machine learning models, including Random Forest, SVM Regressor, XGBoost, ANN, and Logistic Regression, achieving a prediction accuracy of 96.8% in identifying potential defaulters.
- Developed and fine-tuned model features to optimize performance in credit assessment, contributing to more accurate risk prediction and decision-making.

Diagnosing cancerous & non-cancerous breast tumor **Project Report**

Project Brief:

- Predicted the malignancy of breast tumors by analyzing 569 breast tissue samples, applying feature synthesis techniques to accurately classify tumors as cancerous (malignant) or non-cancerous (benign).

Results/Deliverables:

- Plotted model performance graphs for various ML algorithms, demonstrating a 27% improvement, and achieved a prediction accuracy of 99.1% with Logistic Regression classifier for diagnosing breast tumours.
- Utilized AUC-ROC and Precision-Recall curves to evaluate model performance for distinguishing between cancerous and non-cancerous cases.

PROFESSIONAL ACTIVITIES

Workshop and Organizations

- Invited speaker at IIT Delhi Tryst'23, asked to present the contributions of PyTorch to Meta.
- Embodied AI and ML workshop by Nvidia
- AWS Deepracer Student league among Top 5% to complete the challenge
- Embodied Deep learning Engineer workshop by Nvidia GTC'22
- IBM Call for Code '21 among 2% to combat climate challenges
- Ethical Hacking workshop at IIT Delhi
- ORCID Researcher community
- Member of International association of Engineers (IAENG)
- Mentor and Researcher at The Linux Foundation
- Mentor at Topmate and among top 3% of mentor with 20+ Mentees in AI/ML