Shounak Shastri

Email: shounak.shastri@gmail.com https://www.linkedin.com/in/shounak-shastri/
Mobile: (+91) 86809 31795 Address: 2–Shankar Nagar, Nagpur–440010

Summary

Ph.D. with 4 years of industry experience developing and deploying end-to-end scalable Machine Learning solutions (Computer Vision, Natural Language Processing and Generative AI) that deliver measurable business results (23% improvement in productivity, 81% reduction in compliance violations) in industrial settings. Strong background in Python, statistical modelling, cloud-based (AWS) ML deployment and containerization (Docker) in a fast-paced startup environment.

Experience

KamerAI Pvt Ltd. Chennai, TN, IN
Technical Analyst (Current) / Sr. Software Engineer (4 years) *May. 2021 – Present*

- Developed end-to-end GenAI pipeline for fine-tuning LLMs (LLAMA) using cloud infrastructure (AWS EC2, S3) to extract structured data from 2500+ technical documents, with optimized model inference and containerized deployment using Docker.
- Built a scalable computer vision-based safety compliance monitoring system with distributed architecture. Deployed YOLO models to detect PPE and MHE compliance violations resulting in 81% reduction in violations across client facilities.
- Owned data-driven productivity solution for major manufacturing clients. Trained Action Recognition models to detect inefficiencies and ergonomic risks improving productivity by 23% across 25+ production stages.
- Created scalable ML training pipelines enabling non-technical users to collect data, train models, and deploy solutions in dynamic manufacturing settings.
- Collaborated cross-functionally with engineering, product, and client teams to design Computer Vision models and LLMs tailored to industrial safety and compliance needs, directly affecting client productivity metrics and operational efficiency.
- Mentored trainees and interns in model training methodologies and evaluation techniques.

VIT-Vellore Vellore, TN, IN
Teaching and Research Assistant (4 years) *Jan. 2016 – Jan. 2020*

- Researched Steganography algorithms for secure communication. Credited with 6 publications in reputed peer-reviewed publications.
- Taught courses to classes of over 60 students and assisted the professors in devising practical experiments, tests and revision sessions.
- Mentored over 30 undergraduate students leading to multiple conference presentations and prototypes.

Notable Projects

- **GenAI Productionisation:** Built a production-ready pipeline for fine-tuning LLAMA models on AWS EC2 to extract structured data from chemical analysis documents. Defined evaluation metrics to measure extraction accuracy and model robustness. Collaborated with business and engineering teams to integrate results with a dashboard, reducing manual data entry time by approximately 80%.
- **Kamerai Productivity Solution:** Led development and deployment of the KamerAI Productivity Solution for 2 major manufacturing clients spanning over 25 stages in their production line. Applied statistical analysis to daily cycle and ergonomics data to identify inefficiencies and define areas for improvement. Built and optimized a pipeline to train Action Recognition models and give insights into the production line in real-time. Collaborated with the clients and the KamerAI engineering team to develop productivity and ergonomics dashboards. Achieved 100% error reduction across 7 stages and 23% improvement in overall productivity.
- **Kamerai Safety Solution:** Contributed to the development of a real-time Risk Detection, Object Monitoring and Compliance application for deployment at the client's warehouses and factories. Utilized the existing CCTV infrastructure to collect data for monitoring PPE and MHE compliance. Trained and deployed a YOLO-based model to detect violations and report in real time. Resulted in a 81% reduction in overall violations.

Education

- **Vellore Institute of Technology** — Vellore, TN, India
  Doctorate (Ph.D.) in Steganography Algorithms — *Jun. 2015 – Dec. 2020*
- **Vellore Institute of Technology** — Vellore, TN, India
  Master of Technology (M.Tech.) in Communication Engineering — *Jun. 2013 – May. 2015*
- **K. J. Somaiya College of Engineering** — Mumbai, MH, India
  Bachelor of Engineering (B.E.) in Electronics Engineering — *Aug. 2007 – Jul. 2012*

Skills

- **Programming and querying Languages:** Python, Matlab, SQL (basic) and R (basic)
- **ML and Data Science Toolkits:** TensorFlow, PyTorch, ONNX, TensorRT, NumPy, SciPy, Scikit-learn, Pandas, Matplotlib
- **Computer Vision and GenAI:** OpenCV, Nvidia TAO, Ultralytics, Unsloth
- **Statistical analysis:** Experimental design, confidence intervals, error measurements, A/B testing and hypothesis testing.
- **Tools and platforms:** Linux, Git (version control), Docker (containerization), ClearML (MLOps), familiarity with AWS (EC2, S3).

Key Achievements

- Reduced manual document processing time by approximately 80% through implementation of Generative AI solutions.
- Improved industrial safety compliance by 81% using Computer Vision based monitoring systems.
- Increased manufacturing productivity by 23% through data-driven insights and automation.
- Received 2 research awards while pursuing doctorate degree.
- Published 6 peer-reviewed papers in international journals and conferences. ORCID Link