Shounak Shastri

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Summary

Ph.D. with 4 years of industry experience in building and deploying Machine Learning models (Computer Vision, Natural Language Processing and GenAI) afor industrial applications. Demonstrated success in delivering measurable business results (23% improvement in productivity). Proficient in Python, statistical modelling and end-to-end ML development including ideation, experimentation, prototying and monitoring.

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 to extract structured data from technical documents, establishing evaluation metrics and collaborating with business teams on performance dashboards.
- Implemented Computer Vision models achieving 99% accuracy in facial recognition for diverse populations, reducing processing time by 65% in industrial environments.
- Collaborate with internal engineering and product teams and while working closely with clients to design Computer Vision models and LLMs tailored to industrial safety and compliance needs, directly affecting productivity metrics.
- Mentor trainees and interns in model training and testing pipelines.

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.

Projects

- **GenAI Productionisation:** Set up a pipeline for finetuning LLM to process chemical analysis documents and extract data as a json. Fixed metrics to evaluate the model. Collaborated with the business and engineering teams to decide on the dashboard.
- **Face Recognition:** Set up the data and model training pipeline for recognizing faces in an industrial environment. Developed embedding models for detecting and recognizing faces of Indian and Asian origin with 99% accuracy resulting in a 65% reduction in employee attendance and processing time.
- **Kamerai Safety Solution:** Worked as part of a team to develop Risk Detection, Object Monitoring and Compliance application for deployment at the client's warehouses and factories. Leveraged the client's established CCTV network to collect data for monitoring PPE and MHE compliance. Project resulted in a 83% reduction in PPE violations.
- **Kamerai Productivity Solution:** Owned the development and deployment of the KamerAI Productivity Solution for 2 major manufacturing clients. Collaborated with the clients and the KamerAI team to develop productivity and ergonomics dashboards and came up with statistics for improvements. Achieved 100% reduction of errors in 5 stages while improving overall productivity by 23%.

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 – July. 2012*

Skills

- **Programming/Scripting Languages:** Python, R, Matlab
- **Toolkits/Packages:** OpenCV, TensorFlow, Pytorch, Scipy, Scikit Learn, Pandas, Matplotlib, Nvidia TAO, Ultralytics
- Statistical analysis, experimental design, confidence intervals, error measurements and hypothesis testing.
- Experience using Linux with git for version control and familiarty with AWS compute (EC2) and storage products (S3).

Publications

- S.Shastri and V.Thanikaiselvan, "Dual image reversible data hiding using trinary assignment and centre folding strategy with low distortion," J. Vis. Commun. Image Represent., vol. 61, May 2019. Link
- V.Thanikaiselvan, S.Shastri, and S.Ahmad, "Information hiding: Steganography," Stud. Comput. Intell., vol. 660, 2017. Link
- S.Shastri and V.Thanikaiselvan, "Dual Image Reversible Data Hiding Using Rhombus Prediction," in 2019 International Conference on Vision Towards Emerging Trends in Communication and Networking (ViTE-CoN), 2019. Link