# SHAURYASIKT JENA

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## EDUCATION

**University of Southern California** — Los Angeles, CA, USA
*Master of Science in Computer Engineering* − **GPA: 3.9/4.0** — Aug 2022-May 2024
· *Research Assistant, DILL Lab:* Integrating multimodal RAG, LLaMA, and LLaVA into an LLM with a text-image shared embedding space, testing co-pilots for low-documented domains using lab training transcripts.

**Indian Institute of Technology (IIT), Delhi** — New Delhi, India
*Bachelor of Technology in Electrical Engineering* − **GPA: 8.5/10.0** — Jul 2018-May 2022
*Specialization in Cognitive And Intelligent Systems* − ***SGPA: 9.0/10.0***
· *Teaching Assistant:* For the graduate level courses *Advanced Machine Learning*, and *Special Topics in C & IS*

## SKILLS

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|---|---|
| **Languages** | Python, R, MATLAB, C++, C, Java, OCaml, CUDA, Bash, LaTeX, HTML, CSS, SQL |
| **Softwares** | Git, PyTorch, TensorFlow, JAX, Kubernetes, Docker, HuggingFace, NLTK, AWS, NumPy, Pandas |
| **Coursework** | Machine Learning, Deep Learning, Reinforcement Learning, Natural Language Processing, Computer Vision, Parallel & Distributed CPU/GPU computing, Data Structures and Algorithms, Computational Neuroscience, Computer Networks, Computer Networks, Probability |

## EXPERIENCE

**Big Vision LLC | Applied Research Intern | San Diego** — May 2023-Aug 2023
· **Fine-tuned** PaddleOCR improving English OCR to >99% accuracy, 15% better readability for sports strategies
· Pioneered **fine-tuning** of PaddleStructure for machine-readability of text structures, reaching 90% accuracy

**Clemson University | Research Intern | Remote** — May 2021-Jan 2022
· Developed **LSTM** model to estimate soil moisture at multiple depths in parallel, reducing RMSE loss by <4%
· Extrapolated SM data to generate a gradient map with spatial and temporal resolutions of 1-sq.km and 1-day

**Torch Investment Group | Quantitative Research Intern | Singapore** — Jun 2021-Oct 2021
· Refined **LGBM**, **RNN** models to predict annual stock returns, surpassing previous model performance by ∼5%
· Formulated a CAGR-based investment algorithm, yielding over a 10% increase in annual returns across 30 stocks

**Tech Mahindra | Machine Learning Intern | Pune, India** — May 2020-Jul 2020
· Engineered YOLOv4 model to monitor COVID protocols in workplaces, with 85% accuracy in violation detection
· Implemented a parallel Real-Time Streaming Protocol of the detection-alert model to span all the office cameras

## PROJECTS

**Prompt-based Press Conference Video Editor**
· **Winners** in Twelve Labs **Multimodal** AI Hackathon, deployed an industry-grade prompt-based video editor
· Utilized **AWS S3, Transcribe, Rekognition** for efficient video storage, transcription, speaker identification.
· Achieved highest-accuracy clip extraction among 20+ teams, per human judges' evaluation, through extensive prompt engineering and feedback processing with GPT-4o API, ensuring objectivity and precision.

**Data-to-Text Generation with Minimal Supervision**
· **Unsupervised cycle-training** of **LLM**s initialized with 100 supervised samples for data-to-text **generation**
· Improved performance over fully **supervised training** with higher ROUGE, BLEU, METEOR scores by ∼1%

**Cognitive Load Estimation**
· Devised a **DNN** model to estimate cognitive load from HCI data, outclassed best existing performance by 5.2%
· Established benchmarks for 4 classifiers with the previously best ensemble of 8 **GBDT** models as a baseline

**Recreating Scotland Yard with Deep Q-Learning**
· Coded computer player agents of Scotland Yard game with Deep Q-Networks based on **actor-critic algorithm**
· Enhanced in-game intelligence of agents with **adversarial training** and **Monte-Carlo Tree Search** by >40%

## LEADERSHIP AND INVOLVEMENT

❖ **Secretary, Quizzing Club, IITD:** Led a team of 14, organized intra-/extra-mural quizzes, won Best Club
❖ **English Language Mentor, IITD:** Tutored 6 underprivileged freshmen to enable better class participation