Shravan Chandra

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Technologies

Languages: Python, JavaScript, SQL, HTML/CSS

Frameworks PyTorch, TensorFlow, Keras, Scikit-Learn, Flask, NLTK, Transformers, OpenCV, AI Agents

Cloud & MLOps: Azure, Databricks, Docker, Git, PySpark, Postgres, Power BI

Experience

Senior ML Engineer, Bosch Global Software Technologies – Bangalore, IN Jan 2025 – Present

- Engineered and deployed a production-grade predictive maintenance system using Autoencoder-based anomaly detection on ECU telemetry, saving over €300K+ annually and reducing testing downtime by 4 months. System monitors 100+ ECU models across global facilities.
- Led technical strategy as SPOC (Single Point of Contact) for 5+ automation and data projects spanning data aggregation, visualization, and proprietary data extraction. Directed teams to deliver solutions for 100+ users across field testing and ECU monitoring.
- Mentored and onboarded three new team members with technical guidance on ML infrastructure, PyTorch, and Azure. Established knowledge transfer processes and accelerated ramp-up timelines.
- Architected full-stack ML monitoring infrastructure (Power BI + Azure backend) enabling real-time model health assessment for 100+ ECU models across 50+ global users. Implemented model deployment, versioning, and continuous monitoring pipelines reducing debugging turnaround time by 40%.
- Advancing predictive failure analysis using Elastic Net regression on debounce signals in car systems. Identifying critical signal patterns responsible for failures to enable proactive maintenance before system failures occur.

ML Engineer, Bosch Global Software Technologies – Bangalore, IN Aug 2023 – Dec 2024

- Led large-scale migration of core ML infrastructure from TensorFlow 1.x to PyTorch across international teams. Achieved 48% reduction in model training time, implemented GPU acceleration on Azure, and enhanced system maintainability and code quality.
- Developed and implemented advanced statistical algorithms (KL Divergence, Hypothesis Testing) to detect signal drift in ECU measurements with 95% accuracy, enabling faster system-level debugging.
- Designed and deployed ML visualization dashboards using Flask and Power BI providing real-time visibility into model performance across 100+ ECUs for 50+ international users. Streamlined test validation workflows and enabled data-driven decision making for distributed testing teams.
- Collaborated with international engineering teams across 3 countries to deliver scalable solutions, participating in design reviews and technical decision-making.

Software Engineer, Bosch Global Software Technologies – Bangalore, IN Aug 2021 – Aug 2023

- Built Python-based automation tools and GUI applications that reduced manual data analysis time by 45% for 25+ users by designing efficient data processing pipelines and intuitive user interfaces.
- Improved pricing estimation accuracy by 30% and reduced processing time from 90 minutes to 5 minutes by developing automated data extraction system for PCB circuit analysis.
- Reviewed code from team members and provided feedback on code quality, testability, and efficiency, ensuring adherence to best practices and style guidelines.

Junior Analyst - Intern, Goldman Sachs – Bangalore, IN Jan 2021 – July 2021

- Accelerated trade booking time by 65% by automating document verification workflows using Python web scraping and data processing scripts.

Projects

ASL Dictionary & Lookup Agent – 2025 shravnchandr/live-demo

- Developed and deployed live web application for American Sign Language learning using Google Gemini API and AI agent architecture.
- System accepts natural language input (words or paragraphs) and provides step-by-step ASL signing instructions, handling ASL's unique grammar structure (e.g., "I hope you're doing well" → "Me Hope You Good").
- Publicly accessible tool democratizing ASL education by removing barriers of expensive courses and specialized software; usable by anyone with Gemini API key.
- Tools Used: Python, Google Gemini API, AI Agents, JavaScript

Sign-Language Model Expansion & Temporal Modeling – 2024 Exploratory Research Work

- Experimented with the MS-ASL1000 dataset (1,000 classes, 25k samples) to assess scaling challenges in signer diversity, temporal variation, and non-standardized motion patterns.
- Implemented transformer-based temporal models and achieved 62.3% top-1 accuracy, gaining insight into the limitations of current architectures when applied across highly diverse signers and dialects.
- Tools: Python, Transformers, MediaPipe

Progressive Sign Language Quiz Application – 2023 github/Duolingo-ASL

- Designed and developed a full-stack, Duolingo-inspired web application to teach American Sign Language (ASL), directly contributing to **accessible technology development**.
- Engineered a mastery-gated learning system with a quizzes, dynamic level progression, and score tracking.
- Tools Used: Python, Flask, HTML, CSS, Javascript

Diabetic Retinopathy with XAI – 2021 github/Diabetic-Retinopathy

- Developed and optimized an Xception-based deep learning classifier (96% Kappa Score) to detect diabetic retinopathy from fundus images.
- Integrated Grad-CAM to provide Explainable AI (XAI) insights, enhancing model transparency for medical diagnosis by visualizing hemorrhages and lesions on saliency maps.
- Tools Used: Python, Keras, OpenCV, Scikit-Learn

Publications

Dynamic Sign Language Translator May 2022

Shravan Chandra, Venkatarangan MJ, Jyothi TN

10.1109/ICCAR55106.2022.9782661

- Developed a lightweight and automated sign language recognition system achieving 90%+ accuracy using deep learning and Mediapipe for coordinate extraction across 15 phrases

Education

PES University, BTech in Electrical and Electronics Aug 2017 – May 2021

- GPA: 8.5/10.0
- **Coursework:** Python, Data Structures & Algorithms, Database Management Systems, Machine Learning