

Ravindra Siva Sai Kumar Medicharla

ravindrassk1304@gmail.com | (314) 335-9331 | [LinkedIn: Ravindra SSK Medicharla](#) | [GitHub: RavindraSSK](#) | [ravindra-ssk.vercel.app](#)

PROFESSIONAL SUMMARY

ML/AI engineer and graduate researcher with hands-on experience designing, training, and deploying end-to-end machine learning systems across computer vision, generative AI, and healthcare AI domains. Skilled in PyTorch, Hugging Face Transformers, FastAPI, Docker, and AWS, with a strong foundation in model evaluation, explainability, and MLOps. Currently evaluating frontier LLMs at Handshake AI and conducting deep learning research at Saint Louis University (GPA 3.83). Seeking ML/AI engineering roles where I can build and ship production-quality models.

EDUCATION

M.S. in Artificial Intelligence | GPA: 3.83 / 4.0 – Saint Louis University, St. Louis, MO Jan 2025 – Dec 2026
Coursework: Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision, NLP, Databases, Software Development, AI in Modern Software Development, OOP & Data Structures

B. Tech in Civil Engineering | GPA: 3.69 / 4.0 – Vel Tech R&D Institute of Science & Tech, Chennai, India July 2016 – Aug 2020

WORK & RESEARCH EXPERIENCE

AI Trainer – LLM Evaluation & Model Assessment - Handshake AI | Remote April 2026 – Present

- Conduct blind evaluations of frontier large language models by executing complex tasks and assessing reasoning quality, factual accuracy, and overall user experience.
- Design challenging prompts and golden reference solutions to benchmark model capabilities and surface failure cases.
- Contribute to AI alignment and human-in-the-loop workflows through prompt engineering and qualitative model assessment

Graduate Researcher – GeoAI, Computer Vision & Deep Learning – AI-CHESS Lab, SLU | St. Louis, MO Oct 2025 – Mar 2026

- Developed deep learning models using CNNs, GANs, and attention mechanisms for satellite imagery and geospatial data analysis.
- Built reproducible machine learning pipelines using PyTorch, OpenCV, Rasterio, and GeoPandas for preprocessing, training, and evaluation.
- Implemented computer vision techniques for shadow removal and spatial feature extraction to improve downstream geospatial analytics.

Data Visualization Associate – Project Lead (Internship) – Excelerate | Remote Feb 2025 – Mar 2025

- Managed an end-to-end data pipeline for 5,000+ student engagement records, improving data quality and consistency.
- Designed interactive dashboards and KPI reporting solutions using Google Data Studio for global stakeholders.
- Translated analytical findings into actionable insights to support data-driven decision making.

Salesforce Administrator & Developer (Internship) – Salesforce | Remote Aug 2023 – Oct 2023

- Automated CRM workflows using Salesforce Flow and Process Builder, improving operational efficiency and reducing manual effort through business process automation.
- Customized enterprise data models, validation rules, access controls, and SOQL/SOSL-based solutions to support data management and reporting requirements.

Statistics & Data Analytics Specialist– Chegg India Pvt. Ltd. | Remote Apr 2021 – Nov 2024

- Authored and reviewed 500+ advanced probability and statistics solutions using Minitab and R; maintained top accuracy rating and was recognized as 'Quality Champ' for exceptional depth and consistency.
- Applied statistical modelling and inferential techniques to develop rigorous step-by-step solutions for complex data analysis problems, supporting students globally.

Research Intern – Indian Institute of Technology (IIT) Bombay | Mumbai, India Jun 2019 – Aug 2019

- Conducted research on terrestrial laser scanning (TLS) and 3D point-cloud processing for spatial reconstruction applications.
- Processed and analyzed large-scale spatial datasets using registration, filtering, and feature extraction techniques.
- Applied concepts related to computer vision, spatial analytics, and geometric reconstruction workflows.

PROJECTS

MediTrust – Explainable AI Healthcare Risk Prediction Platform (GitHub) Spring 2026

FastAPI · React · PostgreSQL · XGBoost · SHAP · Docker. GitHub Actions · REST APIs · AWS

- Developed a full-stack AI healthcare platform for cardiovascular risk prediction using FastAPI, React, and PostgreSQL with secure role-based access control. (doctor, nurse, admin).
- Built and evaluated machine learning models including Logistic Regression, Random Forest, and XGBoost, achieving a ROC-AUC of 0.87.
- Integrated SHAP-based explainability to provide transparent feature-level insights for clinical decision support.
- Containerized and deployed the application using Docker, AWS (EC2, S3, RDS), and GitHub Actions CI/CD pipelines.

Campus-Objects – Multi-Class Object Detection with LW-DETR Fall 2025

PyTorch · COCO Format · LW-DETE · Python · Bounding Box Visualization

- Collected and annotated a custom dataset of 3,000+ campus images across 8 object categories in COCO format.
- Built an end-to-end object detection pipeline using LW-DETR with transfer learning, data augmentation, and hyperparameter tuning in PyTorch.
- Achieved 0.71 mAP@0.5 on validation data and developed visualization tools for bounding-box inspection and class-wise error analysis.

Snap Tune – AI-Powered Multi-Modal Music Recommender

Spring 2025

Streamlit · BLIP · DistilGPT2 · Spotify API · Hugging Face Transformers

- Developed a multi-modal AI application that generates contextual music recommendations from user-uploaded images using BLIP captioning and GPT-based mood inference.
- Built a real-time inference pipeline with Spotify API integration and deployed the application on Streamlit Cloud.
- Improved recommendation quality by tuning prompt engineering and model generation parameters.

TECHNICAL SKILLS

Machine Learning & Deep Learning: PyTorch, TensorFlow, Scikit-learn, XGBoost, SHAP, Hugging Face Transformers, Transfer Learning, Model Evaluation

Generative AI & LLMs: LLM Evaluation, Prompt Engineering, AI Benchmarking, Human Feedback Workflows, RAG Pipelines, DistilGPT2, BLIP

Computer Vision & Spatial AI: OpenCV, TorchVision, Scikit-image, LW-DETR, GeoPandas, Rasterio, ArcGIS

Programming & Full-Stack Development: Python, SQL, R, Java, JavaScript, FastAPI, REST APIs, React, HTML, CSS

Data Engineering & Databases: PostgreSQL, SOQL, Apache Spark, Hadoop

Data Analytics & Visualization: Pandas, NumPy, SciPy, Tableau, Power BI, Google Data Studio, Minitab

Cloud & MLOps: AWS (EC2, S3, RDS), Docker, Git, GitHub Actions, CI/CD

Developer Tools: VS Code, Jupyter Notebook, Google Colab, GitHub, Claude, Codex

Productivity & Design Tools: Microsoft Excel, AutoCAD, SketchUp, Adobe Photoshop.

PUBLICATIONS & CONFERENCES

- **BIM Usage in Construction Industry: Modal Integration and Clash Detection in Building Design** - Conference Paper & Poster | ResearchGate DOI: 10.13140/RG.2.2.17527.24486.
- **As-Built Mapping Using Terrestrial Laser Scanner (TLS)** Published via Author Café, ResearchGate | DOI: 10.13140/RG.2.2.19204.96645
- Developed technical user manuals for TLS hardware and data processing workflows - adopted as standard lab reference at IIT Bombay.

CERTIFICATIONS

- **AWS Certified Machine Learning Engineer – Associate**
- **Microsoft Certified: Azure AI Engineer Associate (AI-102)**
- **NVIDIA Deep Learning Institute - Introduction to Deploying RAG Pipelines at Scale**
- **NVIDIA Deep Learning Institute - Fundamentals of Accelerated Computing with CUDA Python**
- **IBM Data Science Professional Certificate**

AWARDS

- **Quality Champ – Chegg India** | Recognized for outstanding accuracy and subject depth in Statistics & Probability
- **IAS Summer Research Fellowship – IIT Bombay (2019)** | Competitively selected by the Indian Academy of Sciences to conduct research at one of India's premier technical institutes
- **Vel Tech Mahatma Gandhi Scholarship** | Awarded for academic excellence; covered 75% of undergraduate tuition across the full B. Tech program.

LEADERSHIP & EXTRACURRICULAR

- Captained university handball team across multiple inter-university tournaments including All India University South Zone Handball Tournament (Dec 2018).
- Collegiate shot-put athlete with multiple first-place finishes.
- Student Coordinator & Office Bearer – Indian Concrete Institute (ICI).
- Volunteer – National Service Scheme (NSS).
- Currently pursuing NASM Certified Personal Trainer (CPT) certification.