Jacob Kevin P

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EXECUTIVE SUMMARY

Highly motivated and enthusiastic Computer Science Engineering graduate from SRM University with expertise in AI, deep learning, and computer vision. Experienced in CNNs, Transformers, and hybrid neural networks applied to healthcare (breast cancer, papilledema) and 3D modelling/BIM. Worked on efficient Transformer training for parametric 3D (CAD) data and Model Context Protocol (MCP). Looking forward to leveraging AI for real-world impact and contributing to innovative, research-driven organizations.

EDUCATION

SRM Institute of Science and Technology, Kattankulathur | 2021 - 2025

B. Tech in Computer Science and Engineering with specialization in Cyber Security (GPA: 8.1/10)

SKILLS

Programming Skills: Python, C++, SQL, HTML, CSS, JavaScript, C#
Frameworks: TensorFlow, Keras, PyTorch, Scikit-Learn, Autodesk Revit API
Technical Skills: Artificial Intelligence, Computer Vision, Natural Language Processing, Deep Learning, Cloud Computing, AWS, Model Context Protocol (MCP), Data Preprocessing, Data science, Retrieval-Augmented Generation (RAG), Vector Databases, Algorithms, Feature Engineering
Soft Skills: Time Management, Problem-Solving Skills, Teamwork, Leadership, Adaptability

EXPERIENCE

AI Research Engineer Intern – Sayvai, Coimbatore *July 2025 - Present*

- Explore and implement recent research directions in **generative 3D AI, CAD automation, and Transformer-based architectures for parametric 3D applications.**
- Design novel encoding/decoding pipelines to train Transformers with parametric 3D data.
- Build and integrate 15+ automation tools into Autodesk Revit using the **Model Context Protocol (MCP),** enabling programmatic geometry generation and AI-assisted design workflows.
- Contributing to the integration of LLMs with MCP, with planned **RLHF optimization** to align system behavior with human feedback.

Committee Head – Public Relations, Directorate of Student Affairs *July 2022 – December 2024*

- Invited and coordinated with over **15 esteemed judges** and guests for various college events and managing event timelines.
- Created detailed **agendas** and handled **logistics** for large-scale events, ensuring smooth operations.
- Negotiated judges' fees, achieving a **20% reduction** in MILAN'24 event overall budgeted expenses.

PROJECTS

RAG-based QA System using Mistral-7B (Link to project) | June 2025

Technologies: Python, LangChain, Huggingface Transformers, ChromaDB, BitsandBytes

- Built a Retrieval-Augmented Generation (RAG) system to answer questions from PDF documents using the **Mistral-7B-Instruct** model.
- Used **LangChain + ChromaDB** for document chunking, embedding, and retrieval.
- Optimized to run on NVIDIA 1650 Ti using **4-bit quantization** (BitsandBytes).

Multiclass Classification of Breast Cancer on Histology Slides (Link to project) *January 2025 – May 2025*

Technologies: Python, PyTorch, TensorFlow, Fast API, Docker

- Developed a highly accurate Deep Learning model to classify cases into **Benign** or **Malignant** across 8 classes.
- Built a DenseNet - compact convolutional transformer (CCT) model and achieved an overall **accuracy of 93%**.
- Utilized PyTorch on Python for model development, training, and evaluation.
- Accepted for publication at The 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT), 2025.

Intrusion Detection System using Bidirectional Long Short-Term Memory (Link to project) *March 2025*

Technologies: Python, TensorFlow, Pandas, Sci-kit Learn

- Built a binary attack classification model as base line.
- Utilized key features such as login attempts, session duration, encryption usage, etc. to detect anomalies.
- Achieved an **accuracy of 90%** by using **Bidirectional LSTM** model and finetuning it.
- The model analyzes incoming session data and predicts potential security threats with a confidence-based risk assessment.

CERTIFICATIONS AND WORKSHOPS

- Machine Learning Foundations – AWS Academy
- Software Product Management: The Product Management Team – Infosys Springboard
- Statistical and Machine Learning Fundamentals workshop – Shaastra, IIT Madras
- Convolutional Neural networks workshop – Shaastra, IIT Madras