

Tejus Vignesh Vijayakumar

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Portfolio: <https://tejus.dev> | GitHub: <https://github.com/tejus-vignesh>

A multidisciplinary engineer with over 3 years of experience at the largest bank in India, managed a team of 6 engineers to develop more than 40 payload-encrypted APIs, handling around 1 million requests daily. I also have hands-on experience in developing deep learning models from scratch, including a 60 million parameter Transformer Model (Generative AI) trained on a single Nvidia A100 GPU with 40GB memory for code summary generation, DQN for reinforcement learning and ResNet for image processing. Additionally, I have worked with LLMs like LLAMA-2 and Mistral AI by quantizing weights and using Parameter Efficient Fine-tuning methods.

SKILLS

Data Preprocessing, Data Visualisation, Test-driven development, Troubleshooting, Debugging, Software design patterns, Object-oriented programming, REST API, Technical documentation, Agile methodology, Database programming, System Architecture, Customer Facing, Deep Learning Embedded Systems Engineer, Problem Solving, Written Communication, Machine Learning, Deep Learning, Large Language Models (LLMs), Gen AI, Retrieval Augmented Generation-RAG, Semantic Search, Machine Vision, Workflow Optimization, Information Retrieval, System Design, Mathematics.

Tools and Technologies: Python, Java, C++, Rust, Shell Scripting, Jenkins, PyTorch, TensorFlow, Git, SVN, JIRA, NumPy, SciPy, Scikit-learn, EDA, Pandas, Seaborn, Matplotlib, OpenAI API, Linux, HTML, CSS.

Professional Experience

Tech Mahindra Limited, Mumbai, India.

(July 2018 –May 2021)

Client: State Bank of India

Machine Learning Engineer-II

- Developed and implemented multiple ML models to analyse lead data for customer segmentation.
- Created detailed dashboards to monitor service requests and analyse lead data, including projections for performance improvements.
- Achieved 80% reduction in deployment time through automation in Python and shell scripting.
- Attained 60% reduction in database size and costs by implementing IIB application for log purging based on date range.

Software Engineer-I

- Expertise in API development in IBM Integration Bus using ESQL and Java in an agile environment.
- Developed 15+ encrypted APIs performing data transformations, orchestrations, and aggregation.
- Experience in implementing symmetric and asymmetric encryption methods like AES-256, RSA etc.
- Configure SSL Certificates of end systems and maintain our private certificates in keystores.

Tools and Technologies: IBM Integration Bus(IIB), Python, Java, Junit, Shell Scripting, ESQL, MLOps, Teradata, REST API, Microservices, Oracle 11g RDBMS, MySQL, Postman, JIRA, Git, SVN, MS Excel, HTML, CSS, Test-driven development, Code Review, Debugging, Technical Documentation.

Think & Learn Private Limited (BYJU'S), Bangalore, India.

(December 2016 – May 2017)

Business Development Associate – Intern

- Achieved 60% increase in website traffic through effective data-driven decisions.
- Supervised content publishing pipeline on the firm's blog with 30M+ visitors.
- Installed and maintained third-party marketing scripts based on request.
- Maintain backups of the website's data to prevent data loss.
- Analyse user engagement data and update respective teams with the metrics.

Tools and Technologies: AWS, HTML, CSS, JavaScript, Data Pipelines, Python, SQL, PostgreSQL, Git.

Education

University of Limerick, Ireland. QCA: 3.85/4 (Honours)

August 2023

- Master of Science (MSc) in Artificial intelligence and Machine Learning
- **Thesis:** Transformer-Based Approach for Code Summarization – Comparative Study
- Summary: Compared the performance of an encoder-decoder type transformer model, trained from scratch and fine-tuned LLAMA2 7B model for code summarization.
- Advisor: [Dr. Nikola Nikolov](#)

Tools and Technologies: Python, Shell Scripting, PyTorch, Git, NumPy, SciPy, Scikit-learn, EDA, Pandas, Seaborn, Matplotlib, Transformers, Generative AI, Fine-tuning LLMs, Quantization, Pruning, MongoDB, Google Cloud Platform (GCP), Gen AI.

Kalasalingam University, India.

March 2017

- Bachelor of Technology (B.Tech) in Mechanical Engineering
- Thesis: Analysing Stress and Strain in Custom Crankshaft and Connecting Rod Design
- Tech stack used: AutoCAD, PTC Creo, Ansys

Professional Development

NVIDIA Deep Learning Institute Workshops

- Building Transformer-based Natural Language Processing Applications.
- Introduction to Graph Neural Networks

Udemy Certifications

- Machine Learning with JavaScript – Stephen Grider
- PyTorch for Deep Learning and Computer Vision – Rayam Slim