Jithesh Jalapothu

Seattle, WA | jitheshjalapothu@gmail.com | +1 (669)-455-8625 | http://linkedin.com/in/jithesh-jalapothu-17a184202/ | Portfolio

SUMMARY

Software engineer with expertise in full-stack, backend, and AI systems, with a focus on secure multi-tenant architectures and AI-driven applications. Strong background in PostgreSQL, Python, Java (Spring Boot), and React; practical experience creating transformer models, RAG pipelines, and database-level security (RLS) from scratch. demonstrated capacity to create scalable systems, automate processes, and use clean, production-ready engineering to produce quantifiable business impact.

SKILLS

Programming Languages: Python, Java, JavaScript, SQL, YAML.
Frameworks & Libraries: Angular, React, HTML, CSS, Spring Framework, Spring Boot, Hibernate, JPA, Django.
Databases & Persistence: PostgreSQL, MYSQL, JDBC.
AI / ML Frameworks & Libraries: PyTorch, torchvision, NumPy, Matplotlib, tiktoken.
Tools & Technologies: AWS, GIT, Jenkins, CI/CD Pipelines, Docker, Selenium, Stripe API.
Software Development: Backend & Frontend Engineering, Deep Learning model development (CNNs, TinyVGG), Computer Vision (image preprocessing & augmentation), AI/ML (Transformative Architecture).

PROFESSIONAL EXPERIENCE

Creative Funding Agency, California, USA - Technical Engineer July ’25 - November ’25

- Enhanced user experience by integrating Spotify’s developer API, enabling real-time access to artist information such as popularity, genres, top tracks, and listener metrics.
- Designed and implemented dynamic valuation algorithms to estimate catalog worth based on real-time popularity and engagement metrics, generating ranges such as $800K–$1.2M in projected catalog value and $250K/year in estimated revenue per artist.
- Reduced manual effort in artist valuation by 90% by automating financial projections using Spotify data, replacing spreadsheets with API-driven logic.
- **Technologies:** JavaScript, JSON, React, HTML, CSS, GIT.

Innova Solutions, Hyderabad, India - Software Engineer June ’22 – May ’23

- Spearheaded the development of a cutting-edge Time & Expense management interface using Angular, enhancing platform usability and boosting user satisfaction by 30%.
- The process automation scripts written have reached a level of efficiency which resulted in a 40% reduction of manual work.
- Employed SQL for database management and backend development, ensuring high-level performance across the application.
- Performance testing resulted in a 20% reduction of application load times through optimized load time and scalability improvements.

Technologies: SQL, JavaScript, YAML, TypeScript, Angular, HTML, CSS, Jenkins, AWS, Selenium CI/CD Pipelines.

Manac Info Tech (P) Ltd, Hyderabad, India - Web Development Intern March ’21 – May ’21

- Acquired and honed expertise in HTML, CSS, and JavaScript, laying a strong foundation for modern web application development.
- Collaborated with senior developers to contribute to responsive, user-focused web applications.
- **Technologies:** HTML, CSS, JavaScript, Ajax.

EDUCATION

Seattle University, Seattle, WA September’23 - June’25
Master of Science in Computer Science

Sree Vidyanikethan Engineering College, Tirupati, India June ’18 – May ’22
Bachelor of Technology in Computer Science

PROJECTS

Vault AI (GITHUB**)** November’25 - Present

- Designed a secure multi-tenant SaaS platform using PostgreSQL Row-Level Security (RLS) to enforce tenant isolation at the database layer, removing reliance on application-level tenant filters.
- Implemented JWT-based tenant context propagation in Spring Boot (Java 21) by setting database session variables per request, ensuring automatic enforcement of tenant boundaries.
- Built a Retrieval-Augmented Generation (RAG) pipeline using Spring AI and pgvector, enabling tenant-safe document ingestion and vector similarity search with zero tenant-specific query logic.
- Developed a React frontend with stateless JWT authentication, keeping UI and AI services agnostic of data access rules while maintaining defense-in-depth security.
- **Technologies:** Java 21, Spring Boot 3, PostgreSQL 16, pgvector, Row-Level Security (RLS), Spring AI, JWT, REST APIs, React, Git.

Generative Pre-trained Transformer (GPT – Mini) (GITHUB**)** August ‘25 – October ’25

- Built core components including multi-head self-attention, masked attention, positional embeddings, and transformer blocks.
- Implemented a transformer-based language model from scratch, replicating GPT-2 small architecture (12 layers, 12 heads, 768-dim embeddings).
- Integrated tiktoken for GPT-2-style tokenization and trained model on sample text corpus using PyTorch DataLoader
- Demonstrated knowledge of the fundamentals of deep learning, including dropout, weight sharing, causal masking, and attention mechanisms.
- **Technologies:** Python, PyTorch, NumPy, tiktoken.

Re-Recipe (GITHUB**)** September ’23 – December ’23

- Integrated Google Authentication to enhance user security and streamline logins, reducing unauthorized access by 85% users.
- Engineered responsive web applications with Angular and TypeScript, creating reusable components that accelerated development by 40% and improved performance by 30%.
- Built user-centric recipe features such as Add to Favorites and Create Your Own Recipe, enhancing platform interactivity and encouraging content contribution.
- **Technologies:** HTML, CSS, Angular, TypeScript, JavaScript, Node, ExpressJS, MongoDB.

Food Identifier (GITHUB**)** March ’24 – May ’24

- Developed a TinyVGG-based CNN from scratch to classify food images, achieving 92% test accuracy on the custom dataset.
- Improved model performance by 28% through hyper parameter tuning (learning rate, batch size, optimizer choice).
- Enhanced dataset quality using torch vision augmentations, reducing overfitting by 15% compared to baseline.
- Implemented data augmentation techniques to increase dataset diversity and improve the model robustness and generalization capability by reducing overfitting.
- **Technologies:** Python, PyTorch, Torch vision, NumPy, Pandas, Matplotlib, Google Colab.

ACHIEVEMENTS

- International Mathematics Olympiad: Ranked 775 at the state level, achieving an international ranking of 5858.

CERTIFICATIONS

- Coursera – Introduction to Machine Learning (Link)
- National Conference (NCKITS) – (Brain Disease Classification Age Estimation From MRI).
- Program Essentials in Python (NetworkingID: 1027807749)