Jayachandra Yanamandala

GenAI-LLM: PreTraining, FineTuning, and Prompt Engineering | Deep Learning. ML Engineer | Analytical Modeling, Hyperparameter Tuning Deep Learning Models | Committed to Delivering High-Quality GenAI Solutions

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https://jayc279.github.io GitHub GenAI-LLM Steamlit App (Zilliar)

****** Certifications** GenAI-LLM, Deep Learning Neural Networks
Machine Learning (Stanford) Machine Leaning (UW) Data Sciences

****** Summary GenAI-LLM Experience**

- Stealth Startup: Building **generative-AI pipeline** to implement, evaluate and refine the **Prompt Engineering** techniques to improve quality of completions from different Transformer models.
- **Pretrained and Finetuned** Google Flan-T5-small (**Sequence-to-Sequence**) model against samsum dataset using PEFT LoRA, an Prompt instructions and verify Rogue and Blue scores against test dataset
- **(VLP) Visual Language Pretrained** Salesforce blip model (**Vision Model**) against tomytjandra/h-and-m-fashion-caption using a training sample of 50 images and used the trained model to predict 11 images from test dataset. Bert F1 score ranges between 85% score is 14.9%, and RougeL is 46.44% - (Zero Shot)
- Streamlit App (zilliar_chat) using **Langchain** and **ChatGPT** (**OpenAI**) model. App requires User access token to enable App prompt. Implemented Agent Chain to include 'wikipedia', 'ddg-search', 'arxiv' (working on enhancements)

****** Summary Deep Learning Experience**

- Comprehensive analysis on the explainability of Deep Learning Neural Networks (DLNN) limitations in multiclass classification datasets, highlighting biases and the need for further investigation.
- Designed and executed a 34-layer Residual Deep Neural Network for 3D multi-resolution imaging datasets, predicting human vasculature effects in SenNet + HOA project.
- Applied fully connected Neural Nets to forecast cardiovascular disease risk in individuals with high obesity, optimizing models based on various factors.
- Developed a fully connected Deep Neural Network to predict customer churn in a banking dataset, enabling proactive customer retention strategies.
- Won multiple 'bronze' medals for notebooks written on hyperparameters search techniques:
  Neural Networks Deep Learning Hyperparameters search
  Keras-Tuner-hyperparameters-search-for-Obesity-Risk-Prediction

****** Skills**

- Experience working with Gen AI Large Language Models: HuggingFaces Transformers, OpenAI, and other models, and using Pretraining, finetuning, RAG, Prompt Engineering, RLHF, RLAIF methodologies to improve accuracy and perplexity of unseen/test data.
- Experience in Deep Learning, Predictive Modeling, Data Wrangling, Machine Learning Algorithms methodologies.
- Experience working with TensorFlow, Keras, PyTorch, NLP, Transformers, Data Visualization techniques, Image Augmentation, GANs, Reinforcement Learning, Statistical Analysis.
- Proficient in problem-solving, QA methodologies, and testing frameworks.
- Programming languages including Python, R, Perl, PHP, Tcl, Shell, with experience in C++ and C.
- Cloud platforms such as AWS Sagemaker, AWS EC2, and Google Colab, Google Cloud.

****** GenAI LLM Work Experience**

Stealth Startup Mar 2024 - Present
Artificial Intelligence Consultant

- Building generative-AI pipeline to evaluate and refine the quality of the output produced by generative-AI systems. Implement Prompt Engineering to improve completions from different Transformer models.

****** Summary EDA Work Experience**

- Demonstrated leadership in software engineering, quality assurance, and product support. Proven track record in delivering high-quality solutions working with global teams.
- Recognized for consistently enhancing processes and quality through system development.
- Developed advanced web interfaces for Quality of Results comparison for testing and pre-release software.

Synopsys

Solutions Staff Oct 2018 – Nov 2023

- Crafted customized Python workflows during a 6-month tenure as a Data Scientist at Design Dash analytics.
- Completed prestigious certification courses in Deep Learning Neural Networks, Machine Learning, and Data Sciences from leading institutions.
- Demonstrates outstanding time-management and prioritization abilities, adept at leading both individual and team initiatives.

Mentor Graphics A Siemens Business

Architect Nov 2008 – Oct 2018

- Managed 20+ engineers at P&R Sierra post Mentor Graphics acquisition, prioritizing innovation.
- Developed web apps in PERL, CGI, PHP & MySQL for release monitoring, enabling QoR comparison.
- Coordinated software engineering efforts, managed QA, and production support for products releases.
- Developed pre-release software testing infrastructure and CGI-PERL scripts at customer sites.

Blaze DFM

Operations Lead Feb 2006 – Nov 2008

- Designed QoR system using CGI-PERL and web interfaces for major releases.
- Implemented quality improvement processes with 300+ QoR tests in regression.
- Integrated Aprio's test infrastructure into Blaze for QA nightly suites.
- Developed Perl/Tcl scripts for automated verification and release gating plans.
- Wrote BlazeMO User Manual and managed product release and quality.
- Developed demos for DAC and Synopsys PrimeTime in Blaze MultiMode.

OKI Semiconductor

Staff CAD Engineer Nov 2003 – Feb 2006

- Benchmark-tested Apache RedHawk and Cadence VoltageStorm DG, presenting findings to executive staff.
- Provided support for GGT GoPower power router, verifying bugs before insertion into Pegasus flow.
- Utilized Synopsys PrimeTime for STA, verifying SDC constraints and timing reports for SOCE flow.
- Contributed to various tape-outs, focusing on optimization and timing closure.

Cadence Design Systems

Product Engineer April 1996 – July 2003

- Enhanced product quality and usability by developing flow-level tests in STA, Synthesis, and P&R.
- Provided extensive product and customer support for BuildGates STA and Distributed Synthesis products.
- Developed over 1500 tests for new STA features in the Godzilla release and supported Distributed BGPKS runs.
- Collaborated with PM on Ambit's release model and provided technical support to cross-functional PV teams.
- Received special achievement awards for improving product quality and performance two years in a row.

****** Education**

University of Wyoming Aug 1992 – Dec 1995
M.S. Electrical & Electronics

University of Wyoming April 1994 – April 1996
M.S. Finance