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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

**** GENAI-LLM WORK & PROJECT EXPERIENCE

- **Stealth Startup**   Artificial Intelligence Consultant   Mar 2024 - Present
  – Coding, finetuning and evaluating OpenAI GPT transformer **generative-AI pipeline** model to implement **Prompt Engineering** techniques to verify and improve quality of completions. Documented and analyzed results using charts, Rogue, Blue, Bert scoring techniques, and made recommendation regarding the choice of prompts with respect to implementations and configurations.
- **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 Zero-Shot and a training sample of 50 images and used the trained model to predict 11 images from test dataset. Bert F1 score ranges between 85% & 95%, Blue score is 14.9%, and RougeL is 46.44%.
- 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)

**** DEEP LEARNING PROJECT 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 related to family history, height, weight, age, gender, habits.
- 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

**** CERTIFICATIONS

GenAI-LLM (DeepLearning.ai, AWS)	https://coursera.org/share/bc98caf7558fc3642a065571f4e6fe48
Deep Learning Neural Networks	https://coursera.org/share/06fef9a3ab5b86aad857df668eca4a65
Machine Learning (Stanford Univ)	https://coursera.org/share/43f2f8c29abdc5b3d131cbf2f63c95e6
Machine Leaning (Univ of Washington)	https://coursera.org/share/5aafe816eee9f3010669c19c6fe2c685
Data Sciences (Johns Hopkins Univ)	https://coursera.org/share/289254eb86f7316234a3c180c7232f95

**** SKILLS

- Experience working with Gen AI Large Language Models (LLM) models: HuggingFaces Transformers, OpenAI, and using Pretraining, finetuning, Prompt Engineering with different kinds of feedback (RLHF, RLAIF), RAG methodologies to improve accuracy unseen/test read world data.
- Experience working with TensorFlow, Keras, PyTorch, NLP, Transformers, Data Visualization techniques, Image Augmentation, 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.

**** 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	M.S. Electrical & Electronics	Aug 1992 – Dec 1995
University of Wyoming	M.S. Finance	April 1994 – April 1996