

Technical (GDP, GTO, A&I)

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| Generative AI Engineer |

# MISSION

# A Generative AI Tech lead’s role is to design, develop, refine, and optimize AI-generated text prompts to ensure they are accurate, engaging, and relevant for various applications. It includes Foundation Models and prompts that drive the performance and effectiveness of language models and conversational AI systems.

# Generative AI Engineer’s work with generative models and implement prompt engineering to create new and innovative AI products. They possess experience in working with Large Language Models (LLMs), utilizing external models, and have the ability to fine-tune Foundation Models according to the specific requirements of our company. Their expertise in NLP algorithms, model engineering, and prompt engineering techniques will play a vital role in shaping the capabilities and performance of AI language models.

# KEY RESPONSIBILITIES

* **Prompt Engineering** - Design and develop high-quality prompts and templates that guide the behavior and responses of language models. Craft prompts to elicit specific information or control the model's output, ensuring desired accuracy, relevance, and language fluency. Optimize prompts to improve user interactions and system performance.
* **NLP Model Development** - Design and develop NLP models, algorithms, and architectures to solve complex language understanding and generation problems. Apply state-of-the-art NLP techniques, including but not limited to text classification, named entity recognition, sentiment analysis, language modeling, and dialogue systems.
* **Data Analysis and Preprocessing** - Analyze and preprocess textual data to prepare it for NLP model training and evaluation. Apply text cleaning, tokenization, normalization, and other techniques to ensure data quality and consistency. Handle challenges such as noisy or unstructured data, multilingual text, and domain-specific language.
* **Model Training and Evaluation** - Train and fine-tune NLP models using appropriate algorithms and frameworks. Evaluate model performance using relevant metrics and datasets. Conduct experiments and analysis to improve model accuracy, efficiency, and generalization. Employ techniques like transfer learning and pretraining to leverage existing language models.
* **Performance Optimization** - Optimize NLP models for speed, memory usage, and resource efficiency, enabling real-time or near-real-time responses. Explore techniques like quantization, model compression, and model distillation to reduce model size and inference latency. Collaborate with engineers to deploy and scale models in production environments.
* **Research and Innovation** - Stay updated with the latest research advancements and trends in NLP. Explore and experiment with novel techniques, models, and approaches to solve challenging NLP problems. Publish papers, contribute to open-source projects, and participate in relevant conferences or communities.

# INFLUENCE / INTERACTION

* Collaborate with data scientists, machine learning engineers, software engineers, and domain experts to understand business requirements and objectives.
* Collaboration with data scientists, machine learning engineers, and cross-functional teams creating high-quality prompts, refining model outputs, and enhancing the overall user experience.
* Collaborate with cross-functional teams including engineering, design, marketing etc. to identify use cases for generative AI.
* Collaborate with security and enterprise architects to assess data, user, and service access creating policies and infrastructure
* Mentor and provide technical guidance to Dat, AI, GenAI communities.
* Monitor progress, provide status updates and demonstrate generative AI capabilities to stakeholders.

# SKILLS

* MS/PhD in Computer Science, AI, Machine Learning or related field.
* +5 years' experience developing and deploying AI/ML projects
* Deep understanding of **Natural Language Processing** algorithms, techniques, architectures, including text classification, sentiment analysis, named entity recognition, language modeling, and dialogue systems.
* Experience with **machine learning frameworks** (TensorFlow, PyTorch,..) & deep learning for NLP.
* Proficiency in **data preprocessing**, text normalization, tokenization, …
* Experience in working with **Large Language Models** (LLMs)
* **Strong analytical & problem-solving skills**, with the ability to formulate NLP solutions for complex language understanding & generation tasks.
* Familiarity with **prompt engineering techniques and methodologies**, including designing and optimizing prompts to control model behavior & outputs.
* Experience in **training & fine-tuning NLP models** using large-scale datasets & relevant evaluation metrics.

# SKILL LEVEL / COMPETENCY MODEL DEFINITION

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| |  |  | | --- | --- | | **Compentency** | **Level** | | **AGILE & DEVELOPMENT** | **2,5** | | **AGILE MINDSET & FRAMEWORKS** | **4,0** | | **CLOUD** | **2,7** | | **CODING & DEVELOPMENT** | **3,0** | | TEST MANAGEMENT | 3,0 | | MICROSERVICES | 2,0 | | APPLICATION PROGRAMMING INTERFACES APIS (WEB SERVICES, REST, SOAP, JSON ETC..) | 3,0 | | SQL | 3,0 | | PYTHON | 4,0 | | **CYBERSECURITY** | **2,3** | | **DATA, AI, ML** | **3,4** | | DATA ENGINEERING | 3,0 | | DATA MODELLING (DATA BASE MODELLING - SQL OR NOSQL, MDM) | 4,0 | | DATA PRIVACY & REGULATION | 2,0 | | GENERATIVE AI | 5,0 | | COMPUTER / MACHINE VISION | 4,0 | | NEURAL NETWORKS AND DEEP LEARNING | 4,0 | | STATISTICAL MEASUREMENT QUALITY | 3,0 | | NATURAL LANGUAGE PROCESSING (NLP) | 4,0 | | STATISTICS ( MODELLING, DESCRIPTIVE & EXPLANTORY VARIABLES) | 3,0 | | MACHINE LEARNING | 5,0 | | DATA VISUALIZATION | 3,0 | | DATA COLLECT | 3,0 | | BIG DATA ANALYSIS / PROCESSING IT | 2,0 | | DATA MANAGEMENT AND STORAGE | 3,0 | | **DEVOPS** | **3,0** | | **GOVERNANCE** | **2,5** | | **HCD / USER EXPERIENCE** | **2,0** | | **OPERATIONS & SUPPORT** | **3,0** | | **PLATFORMS** | **2,3** | | **TECHNICAL** | **2,0** | | SOLUTION DEPLOYMENT | 2,0 | |  |

# JOB MODEL

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| Level 1 – Entry Level | Level 2 – Senior Level | Level 3 – Expert Level |
| 1 – 3 years experience  Assisting in the development and refinement of natural language understanding (NLU) models.  Collaborating with senior prompt engineers and NLP experts.  Learning and implementing best practices in prompt engineering.  Gaining proficiency in relevant NLP libraries and tools.  Assisting in data collection and annotation for training NLU models. | 3 – 7 years experience  Leading the design and development of effective prompts for NLU models.  Collaborating with NLP researchers and data scientists to improve model performance.  Mentoring junior prompt engineers and contributing to their development.  Evaluating and fine-tuning prompts to enhance model accuracy.  Staying updated on the latest developments in NLP and prompt engineering. | > 7 years experience  Defining the organization's prompt engineering strategy and best practices.  Leading and overseeing the development of advanced prompts and NLU models.  Providing thought leadership in prompt engineering and NLP technology.  Collaborating with executive leadership on strategic NLP initiatives.  Driving innovation and continuous improvement in prompt engineering.  Representing the organization in NLP research and industry conferences and forums. |