John Snow LABS

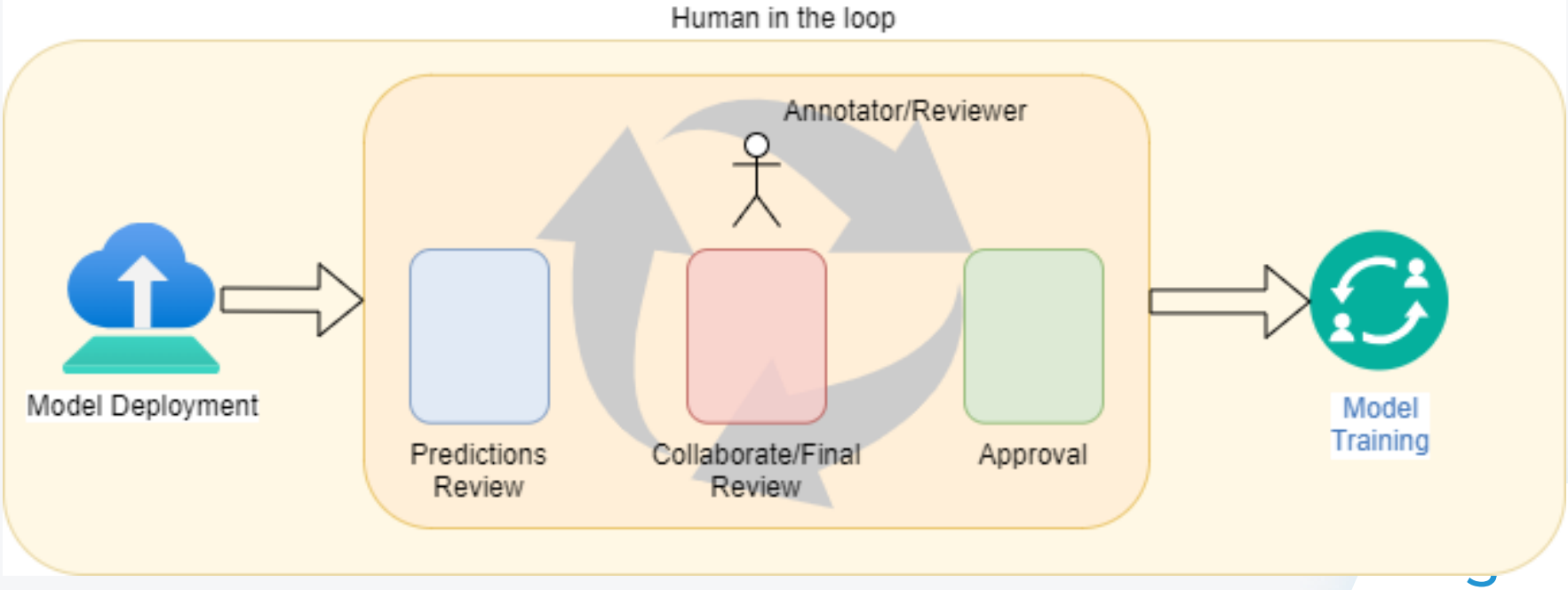
Using LLMs to Build Task-Specific AI Models with the No-Code Generative AI Lab

Use Cases:

1. Human-in-the-loop AI workflow
2. Train small language model
3. Employ prompt engineering by using Generative AI Lab Zero-Shot Prompts
4. Entity extraction from very large (pdf) documents

Human-in-the-loop AI workflow

A pre-trained language model is employed to identify clinical entities, decipher relationships, and classify codes within clinical documentation. Despite the model's capabilities, it requires human verification to ensure accuracy and reliability before the results are exported for practical use.



Human-in-the-loop AI workflow Objectives:

1. Accuracy Validation
2. Collaborative Review
3. Audit Trail Maintenance
4. Continuous Improvement
5. Iterate

Human-in-the-loop AI workflow Benefits:

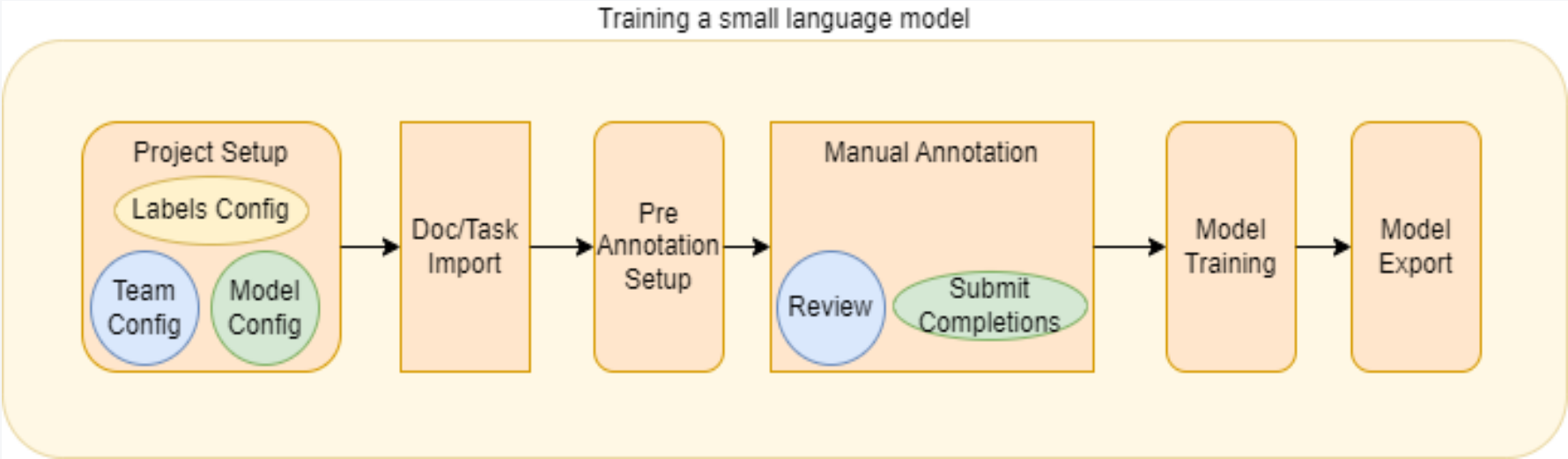
1. Enhanced Accuracy
2. Efficient Collaboration
3. Regulatory Compliance
4. Model Evolution

Human-in-the-loop AI workflow

Demo

Training a small language model

An individual or organization seeks to create a Named Entity Recognition (NER) model by leveraging both pre-annotated data from an existing language model and manual annotations to improve accuracy. The workflow includes uploading documents, running pre-annotations, manually correcting and augmenting the annotations, training a new model based on the enriched data, and exporting the refined model for operational use.



Training a small language model
Objectives:

1. Pre-annotate documents
2. Manual annotation and Correction
3. Train a new model
4. Export the enhanced model

Training a small language model
Benefits:

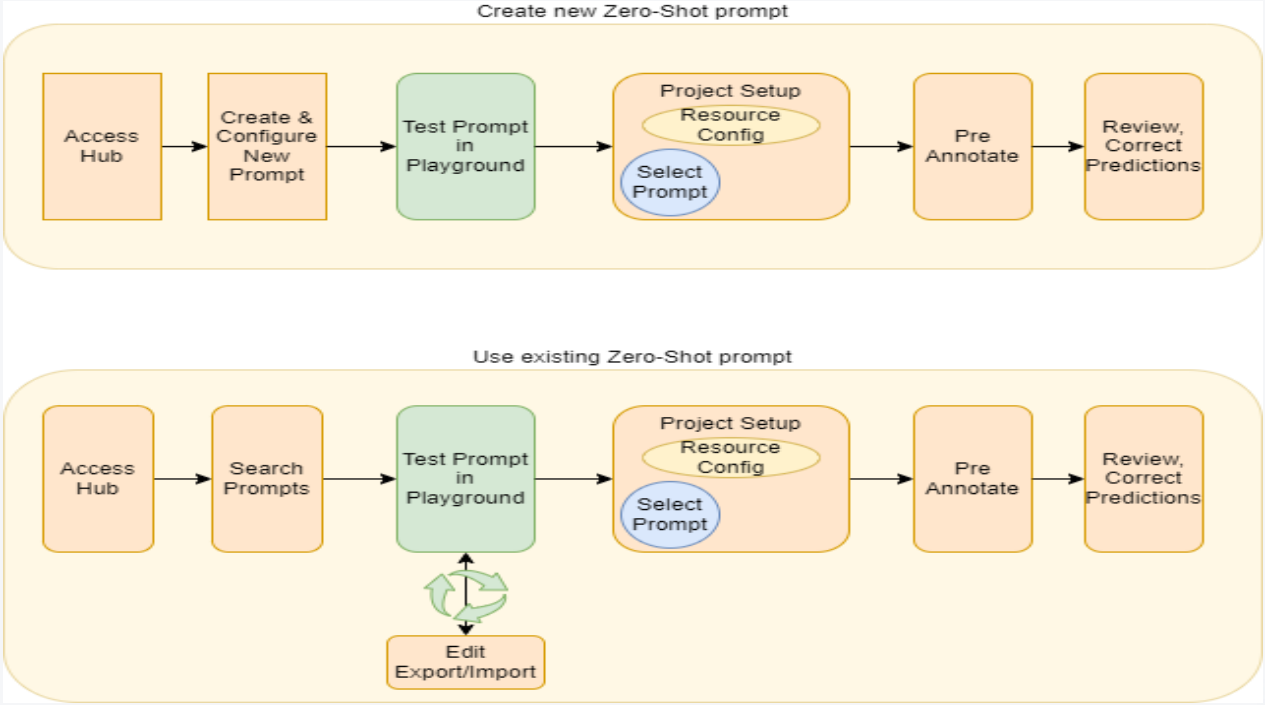
1. Efficiency in Annotation
2. Improved Accuracy
3. Scalability
4. Cost Effectiveness

Training a small language model

Demo

Prompt Engineering with Generative AI Lab

Create a task-specific language model by leveraging LLM (Large Language Model) prompts. It involves crafting, refining, and deploying prompts in Generative AI Lab's hub, highlighting the utility of a centralized repository for managing and enhancing various NLP resources. This scenario is particularly useful for organizations or individuals looking to develop specialized models without starting from scratch.



Prompt Engineering with Generative AI Lab Objectives:

1. Create Custom LLM Prompts
2. Edit and Refine Prompts
3. Deploy Prompts for Pre-annotation
4. Review and Edit Predictions

Prompt Engineering with Generative AI Lab Benefits:

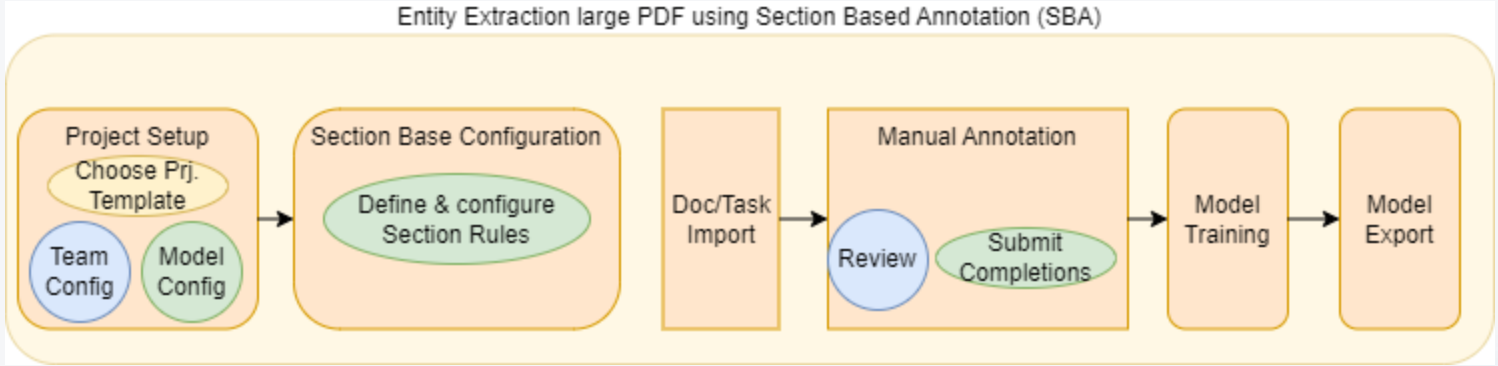
1. Resource Sharing and Reuse
2. Innovative Development Environment
3. Enhanced Project Efficiency
4. Quality and Consistency

Prompt Engineering with Generative AI Lab

Demo

Entity extraction from very large (pdf) documents

This use case focuses on efficiently extracting information from extensive 200-page-long PDF documents.
It demonstrates the application of Section-Based Annotation feature of Generative AI Lab and Visual Named Entity Recognition (Visual NER) directly on the PDF to streamline the extraction process.
This approach is ideal for detailed and lengthy documents where precise information retrieval is critical, such as legal documents, medical documents, or extensive research papers.



Entity extraction from very large (pdf) documents
Objectives:

1. Demonstrate Section-Based Annotation
2. Utilize Visual NER for Direct Annotation
3. Streamline Project Setup for Visual PDFs

Entity extraction from very large (pdf) documents
Benefits:

1. Enhanced Accuracy and Efficiency
2. Improved Usability
3. Scalable and Flexible Annotation Process

Entity extraction from very large (pdf) documents

Demo

Generative AI Lab

- **AWS Marketplace, Azure marketplace**
  - ✓ Visual NLP included
    - ✓ OCR, pre-annotations on PDFs, visual model training
  - ✓ Healthcare resources included
    - ✓ Healthcare specific Embeddings, NER models, Entity Resolution, Assertion Status, Relation Extraction, etc.
  - ✓ Professional Support

- **On-Premise**

Generative AI Lab

Resources:

Generative AI Lab Projects:

- MedicalInfo-Demo
- Prompts-Demo

Questions?

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