**Machine Learning Engineer**

**Summary of Work**

As a Machine Learning Engineer, my work focuses on developing, implementing, and managing machine learning models and software tools, particularly for image processing, bioinformatics, and deep learning applications. My key responsibilities include:

**1 - Ludwig & PyCaret Frameworks - Machine Learning & Deep Learning Model**

* Designing and fine-tuning image feature encoders (ResNet, ViT, Stacked CNN, etc.) for research applications.
* Implementing techniques to enhance training data diversity.
* Writing and configuring files for defining input features, model architectures, and augmentation strategies.

**2 - Galaxy Project - Software Development & Workflow Integration**

* Creating and integrating ML tools into Galaxy-based bioinformatics workflows.
* Developing embedding scripts for feature extraction and Multiple Instance Learning scripts for to predict the labels of new, unseen bags.
* Building a model performance evaluation dashboard for Galaxy output reports.

**3 - Computing Infrastructure & Environment Management**

* Ensuring the seamless execution of ML pipelines in high-performance computing environments.
* Administering and troubleshooting dependency issues and system configurations.

**4 - Collaboration & Research Support**

* Working closely with Dr. Goecks (Principal Investigator) and researchers to implement ML models for cancer research.
* Participating in conferences and courses to advance ML tool development.
* Training new staff and providing technical expertise in ML software development.

**5 - Quality Assurance & Continuous Learning**

* Staying updated on cutting-edge ML software, informatics tools, and best practices.
* Contributing to precision oncology research to enhance cancer patient outcomes.