**Machine Learning (C++) Internship (Online)**

Week 1:

* Review the fundamentals of C++ programming, including data structures and algorithms
* Familiarize yourself with the company's machine learning codebase and development environment
* Set up your machine learning development environment with C++ libraries and tools

Week 2:

* Dive into the mathematical foundations of machine learning, including linear algebra, calculus, and probability theory
* Implement basic machine learning algorithms, such as linear regression and logistic regression, from scratch using C++
* Explore data preprocessing and feature engineering techniques in C++

Week 3:

* Learn about more advanced machine learning algorithms, such as decision trees, random forests, and neural networks
* Implement these algorithms in C++ and experiment with different datasets
* Understand the machine learning workflow, including model training, evaluation, and deployment

Week 4:

* Explore the use of C++ libraries and frameworks for machine learning, such as Armadillo, Shogun, or dlib
* Work on a real-world machine learning project, focusing on data acquisition, preprocessing, and model training
* Experiment with hyperparameter tuning and model optimization techniques in C++

Week 5:

* Dive into deep learning and neural network architectures using C++ libraries like TensorFlow or PyTorch C++ API
* Implement a deep learning model from scratch or utilize pre-built models in your machine learning project
* Analyze the performance of your machine learning models and document your findings

Week 6:

* Explore advanced machine learning techniques, such as transfer learning, ensemble methods, or time series analysis
* Incorporate your learnings into your machine learning project and refine your models
* Prepare a final presentation to showcase your work and learnings during the internship