**Basic 3-Month Machine Learning Internship Outline:**

*Weeks 1-2: Introduction to Machine Learning Basics*

1. Overview of Machine Learning: Concepts, types, and applications.
2. Introduction to Python for Machine Learning: Basic syntax and data manipulation.
3. Exploratory Data Analysis (EDA): Understanding and preparing data for ML tasks.

*Weeks 3-4: Fundamentals of Natural Language Processing (NLP)*

1. Introduction to NLP: Key concepts and applications.
2. Text Processing: Tokenization, stemming, and lemmatization.
3. Feature Extraction: Bag-of-words, TF-IDF, and word embeddings.

*Weeks 5-6: Building Simple Machine Learning Models*

1. Supervised Learning: Linear regression, logistic regression.
2. Model Evaluation: Metrics like accuracy, precision, recall.
3. Unsupervised Learning: Clustering (k-means) and dimensionality reduction.

*Weeks 7-8: Introduction to Web Scraping*

1. Basics of web scraping: Tools and libraries.
2. Hands-on web scraping project: Extracting data from websites.
3. Ethical considerations and best practices in web scraping.

*Weeks 9-10: Resume Parsing Basics*

1. Overview of resume parsing: Importance and applications.
2. Introduction to regular expressions for text extraction.
3. Building a basic resume parser using Python.

*Weeks 11-12: Project Work and Review*

1. Resume parsing project: Implementing and refining the parser.
2. Peer code review and collaboration.
3. Documentation and presentation of the project.

**Advanced 3-Month Machine Learning Internship Outline:**

*Weeks 13-14: Advanced Natural Language Processing (NLP)*

1. Named Entity Recognition (NER) and sentiment analysis.
2. Advanced text processing techniques.
3. Deep learning for NLP: Introduction to RNNs and LSTMs.

*Weeks 15-16: Deep Learning and Neural Networks*

1. Deep learning fundamentals: Neural network architecture.
2. Hands-on projects with deep learning frameworks (TensorFlow or PyTorch).
3. Transfer learning for machine learning applications.

*Weeks 17-18: Advanced Model Evaluation and Hyperparameter Tuning*

1. Cross-validation techniques for model evaluation.
2. Hyperparameter tuning: Grid search and random search.
3. Model deployment considerations and best practices.

*Weeks 19-20: Advanced Web Scraping Techniques*

1. Dynamic web scraping: Handling JavaScript-based websites.
2. Scraping APIs: Extracting data through web services.
3. Data storage and management for scraped data.

*Weeks 21-22: Advanced Resume Parsing*

1. Named Entity Recognition (NER) for resumes.
2. Handling different resume formats and structures.
3. Incorporating machine learning for improved parsing accuracy.

*Weeks 23-24: Final Project and Presentation*

1. Interns work on a comprehensive machine learning project.
2. Project presentations and demos.
3. Feedback and recommendations for further learning.