# Tasks List

## Internship Tasks and Completion Requirements

Minimum Requirements to Be Eligible for an Internship Completion Certificate:

1. **LinkedIn Profile Improvement (Mandatory Task):**
    a. Improve your professional profile on LinkedIn. It is **MANDATORY FOR ALL**.

2. **Complete at Least One Task from Your Internship Domain**:
    a. You must complete at least one of the following tasks specific to your internship function.
    b. You are encouraged to complete additional tasks for further learning and to enhance your chances of receiving a Letter of Recommendation (LoR).

**Note:**

- Completing more tasks increases your learning experience and improves your chances of receiving a Letter of Recommendation (LoR).
- Be sure to document your work and provide links or evidence of your completed tasks when submitting them.

# Task-1

## LinkedIn Profile Improvement (Mandatory Task)

1. **Complete Your LinkedIn Profile**:
    - **Description**: Fully update your LinkedIn profile to reflect all details from your resume, including your objective, education, projects, experience, skills, certifications, and volunteer experience.
    - **Why**: A comprehensive and well-structured LinkedIn profile enhances your professional presence and increases your chances of networking and job opportunities.
    - **Tasks**:
        - **Objective**: Write a clear and concise professional summary that highlights your career goals and aspirations.
        - **Education**: Add all relevant educational details, including degrees, institutions, and years attended.
        - **Projects**: Describe your key projects, including the problem statement, your role, and the outcomes.
        - **Experience**: List all relevant work and internship experiences with detailed descriptions of your responsibilities and achievements.
        - **Skills**: Add relevant skills and seek endorsements from your connections.
        - **Certifications**: Include any certifications you have obtained.
        - **Volunteer Experience**: Highlight any volunteer work or community service.

2. **Expand Your Network**:
    - **Description**: Connect with a diverse range of professionals, including professors, friends, seniors, industry leaders, and colleagues.
    - **Why**: A strong network can provide valuable connections, job leads, and professional support.
    - **Tasks**:
        - **Send Connection Requests**: Reach out to your professors, friends, seniors, and industry leaders with personalized connection requests.

        - **Explore Existing Connections**: Review the connections of your current network and add professionals with reputable profiles.
        - **Follow Relevant Influencers and Companies**: Follow industry leaders, companies, and organizations relevant to your field to stay updated on trends and opportunities.
        - **Engage with Your Network**: Like, comment, and share relevant posts to stay active and visible in your network.

3. **Join and Connect with CodeSpaze Community**:
    - **Description**: Connect with CodeSpaze and its members to become an active part of the community.
    - **Why**: Being connected with your internship community can provide additional support, opportunities, and a sense of belonging.
- **Tasks**:
        - **Connect with CodeSpaze**: Follow the CodeSpaze company page on LinkedIn.
        - **Connect with Members**: Send connection requests to all existing members of CodeSpaze.
        - **Engage with CodeSpaze Content**: Like, comment, and share CodeSpaze posts to increase your visibility within the community.
        - **Join Relevant Groups**: Join LinkedIn groups related to CodeSpaze and your field of interest to participate in discussions and network with like-minded professionals.

4. **Optimize Your Profile for Job Searches**:
    - **Description**: Ensure your profile is optimized for recruiters and job searches.
    - **Why**: An optimized profile can increase your visibility to recruiters and improve your chances of landing job opportunities.
- **Tasks**:
        - **Profile Photo**: Use a professional profile photo.
        - **Headline**: Craft a compelling headline that includes keywords relevant to your career.
        - **About Section**: Write a detailed 'About' section that highlights your skills, experience, and career goals.

- **Featured Section**: Add links to your portfolio, projects, articles, or any other work that showcases your expertise.
- **Recommendations**: Request recommendations from professors, colleagues, or supervisors to add credibility to your profile.
- **Custom URL**: Customize your LinkedIn profile URL to make it more professional and easier to share.

By completing these tasks, you will enhance your LinkedIn profile, expand your professional network, and increase your visibility to potential employers and industry professionals.

# Task-2

## Domain Specific Task:

**Machine Learning Intern**

1. **Data Preprocessing and Exploratory Data Analysis (EDA):**
    - **Description:** Perform data preprocessing and EDA on a real-world dataset using Python libraries like pandas, NumPy, and Matplotlib.
    - **Why:** Proper data preprocessing is essential for successful machine learning model building.
    - **Tasks:**
        - Choose a dataset from Kaggle or UCI Machine Learning Repository.
        - Clean and preprocess the dataset (handle missing values, normalize data, etc.).
        - Perform EDA, generate visualizations, and identify important patterns and correlations.
        - Submit a Jupyter notebook with code, visualizations, and conclusions.
        - Upload the project on GitHub and share the link.
2. **Build and Train a Simple Machine Learning Model:**
    - **Description:** Implement a basic ML model (e.g., linear regression, decision tree) and evaluate its performance.
    - **Why:** Learning how to implement and evaluate models is foundational to ML.
    - **Tasks:**
        - Select an appropriate supervised learning algorithm for the dataset.
        - Split the data into training and test sets.
        - Train the model and evaluate it using performance metrics (e.g., accuracy, precision, recall, F1-score).
        - Use cross-validation to improve model reliability.
        - Publish the project on GitHub, and submit a report explaining the model, performance, and conclusions.
3. **Create a Mini Deep Learning Project:**
    - **Description:** Implement a basic deep learning model using TensorFlow or PyTorch.
    - **Why:** Deep learning is crucial for more complex machine learning tasks.
    - **Tasks:**
        - Choose a simple dataset (e.g., MNIST for image classification or IMDb for sentiment analysis).
        - Build a feedforward neural network using TensorFlow or PyTorch.
        - Train and test the model, and visualize the learning process (e.g., loss curves, accuracy).
        - Submit the model code, training logs, and evaluation report.
        - Post the project on GitHub and share the link.

4. **Dimensionality Reduction Techniques:**

- **Description:** Apply dimensionality reduction techniques to optimize model performance by reducing the number of input features.
- **Why:** Reducing the dimensionality helps to eliminate redundant data, speeding up computations and improving model generalization.
- **Tasks:**
    - Use **Principal Component Analysis (PCA)** or **t-SNE** to reduce the dimensionality of a dataset (e.g., the MNIST or CIFAR-10 dataset).
    - Train a classification model on the reduced dataset and compare its performance with the original high-dimensional dataset.
    - Analyze and report the trade-offs between dimensionality reduction and model performance.
    - Submit the code and analysis, and upload a blog post on Medium or any other platform, sharing the link.

5. **Hyperparameter Tuning with GridSearchCV or RandomizedSearchCV:**

- **Description:** Perform hyperparameter tuning to optimize the performance of a machine learning model.
- **Why:** Hyperparameter tuning is essential to get the best possible performance from a machine learning model.
- **Tasks:**
    - Train a machine learning model (e.g., Random Forest or SVM) on a dataset.
    - Use **GridSearchCV** or **RandomizedSearchCV** to find the optimal hyperparameters.
    - Compare the model's performance with and without tuning.
    - Submit the code with the analysis of the tuned hyperparameters, and upload the project on GitHub, sharing the link.

# Asks us for help!

- The purpose of the internship is to learn.
- Please ask for help as much as you need.
- We don’t want to dictate you. So, it is up to you to seek guidance.
- The tasks given may seem very easy or very difficult. We expect that you give professional due regard to the tasks.

**Join Us!** We are excited to have you on board and look forward to your contributions. If you need any help or have questions, please don’t hesitate to ask. Connect with us and follow our updates on:

- **CodeSpaze Website:** www.codespaze.com
- **LinkedIn:** CodeSpaze LinkedIn
- **Instagram:** @codespaze
- **Facebook:** CodeSpaze Facebook
- **Telegram:** Stay updated and engage with fellow interns by joining our Telegram channel Join Now

We’re here to support your journey and make this internship a valuable learning experience!