**Short Description of the Objectives of the Interview:**

We are conducting a study to create a taxonomy of the problems that developers encounter when developing systems that use deep learning. As part of this study, we analyze Github commits/issues and Stack Overflow discussions related to deep learning frameworks such as Tensorflow, Keras and Pytorch. However, these sources of information can not be representative of all the issues that developers face. Therefore, we are conducting this survey/interview with developers to get a wider picture on the real-world problems in DL systems.

**Short Introduction of the Interviewers.**

**Questions:**

1. Permission for taping and sharing their transcribed interview.

/Yes/No/

2. Some background information.

/Current Position/Overall Experience/Experience in DL/etc.

3. What type of deep learning networks have you developed/implemented?

/Supervised/Unsupervised/Reinforcement Learning/etc.

4. Which problems are/were you trying to tackle using DL network?

/Image Classification/Speech Recognition/etc.

5. Which programming languages/frameworks have you been using?

/Python/Java/Tensorflow/Keras/Pytorch/etc.

**Plan A.**

Ask the general question and see where it goes.

**Plan B.**

6. Have you used existing data sets to train your network?

/Yes/No/

6.1. If no:

6.1.1. How did you collect data?

6.1.2. Did you pre-process the collected data n

/Sample Rescaling/Mean Subtraction/Random Cropping/Color Jittering/PCA/ZCA

Whitening/etc.

6.1.3. What kind of problems related to training data did you face in the process?

/Not Enough Data/Wrong Labels/Wrong Order of Data/etc.

6.2. If yes:

6.2.1. Which existing dataset did you use?

/MNIST/CIFAR/etc.

6.2.2. Did you use the whole dataset to train the model?

/Yes/No

6.2.2.1. If no:

6.2.2.1.1. Why? (hoping they will tell us about some problems big dataset

causes to them)

6.2.2.1.2. How did you decide which part of training data to use? Did you

face any problems when sampling the data?

/Random/Any Reasoning (hoping they will tell us why some parts of

data were problematic)

6.2.3. What kind of problems related to training data did you face in the process?

/Not Enough Data/Wrong Labels/Wrong Order of Data/etc.

7. Can you tell us about the structure of the models you have been using? Have you ever

faced problems related to the wrong model structure? What were they?

(hoping to hear about model structure bugs)

7.1. Was it about the number/types of the layers?

/Yes/No/

7.1.1. If yes:

Which layer does it apply to?

/Dropout/Normalisation/etc.

7.2. Was it about selecting the dimensions of the layer?

/Yes/No/

8. Have you ever faced problems related to hyperparameter tuning?

(hoping to hear about hyperparameter tuning)

8.1. If yes:

Which hyperparameter is it?

(batch size, activation function, learning rate)

9. Did you use a pre-defined or a custom-written loss function? Did you face any problems

because of the loss function?

(hoping to hear about loss function problems)

10. Where do you train your models? Do you use some specific hardware? Have you ever

encountered problems related to hardware?