Team XX - One-Pager

**[Your one-pager should include the following points as a minimum (this is an illustrative example). You are free to include any additional details you find relevant to your strategy. Note everything inside [] brackets should be deleted in your submission!]**

**Introduction [2-3 lines]:**

We have implemented a feedforward neural network with hyperparameters optimized via randomized search and a stacking ensemble on the top-5 best models.

**Strategy [remainder]:**

* 1. **Final Model(s)**: Feedforward Neural Network
  2. **Exploratory Data Analysis [optional]**:
     1. We found feature *xx* and *yy* to have extreme outliers, we remove/truncated these using *zz*.
     2. Seasonality is present in the dependent variable, we account for this using ...
     3. There does not seem to be any cyclical or distributional changes between our training and validation set...
  3. **Training/validation split**: 75% training (2015-2017) / 25% validation (2018)
  4. **Data and feature engineering:** Calendar timestamps (hour, season, etc.)
  5. **Model and Training Details**:
     1. Fully-connected neural network
     2. Stochastic Gradient Descent with early stopping on the validation set
     3. L2 regularization on all hidden units
     4. Dropout included
     5. Batchnorm included
     6. Cosine Annealing learning rate scheduler
     7. Randomized search for finding optimal hyperparameters (based on ... combinations).
     8. Stacking Ensemble model for final predictions based on top 5 models from iii).
     9. Etc...
  6. **Results and future ideas**:
     1. The best model had the following hyperparameters (2 layers of [128, 64] size, etc...)
     2. We also tested linear regression, Ridge regression and Random Forests, but found our neural network model to perform the best with a relative reduction in mean absolute error of 12%
     3. Overfitting was a severe issue, and we generally found increasing regularization to improve performance
     4. Performance during summer months seem inferior for our model, we think a dummy variable for seasonality could improve results but due to time constraints we could not investigate this...
     5. (Please keep this section on point with solid and realistic arguments such as the above. Comments such as *“we would like to test the state-of-the-art LSTM model”* will not give any points.)

[The more detailed and creative your response/strategy is (within the page limit of course), the more points it will count towards the final prize.]