ProcessGAN: Supporting the Creation of Business Process Improvement Ideas through Generative Machine Learning

In the following, the parameter configuration used in the quantitative pre-study is displayed:

Parameter	**Value(s)**	**Rationale**
Beta1	0.5	Based on Taymouri et al. [1]
Beta2	0.999	Based on Taymouri et al. [1]
Learning rate	0.0002	Based on Taymouri et al. [1]
Number of epochs	30, 60, 100	Bootstrapping (grid search approach)
r (ratio of generator loss components)	0.25, 0.5, 0.75, 0.9	Bootstrapping (grid search approach)
n (percentage of most frequent traces)	10%	Based on authors' judgment regarding the distribution of process variants: With p = 10%, the most frequent traces only feature one process variant which makes up for 57% of all process traces. Hence, the remaining 43% of traces are classified as positive deviance.

The corresponding output is also included in the online repository and can be analysed with any process discovery tool. The name of each file indicates the choice of parameters for epochs and r values.

[1] F. Taymouri, M. La Rosa, S. Erfani, Z.D. Bozorgi, I. Verenich, Predictive Business Process Monitoring via Generative Adversarial Nets: The Case of Next Event Prediction, in: D. Fahland, C. Ghidini, J. Becker, M. Dumas (Eds.), Business Process Management, Springer International, 2020, pp. 237–256.