**JOHANNES KEPLER
UNIVERSITY LINZ**

Helga Ludwig, MSc
Institute for
Machine Learning

P +43 732 2468 4481
ludwig@ml.jku.at

Office:
Birgit Hauer
Ext.4520
birgit@ml.jku.at

Linz, February 23rd, 2021

**Opponent review of "Understanding Protein
Function Prediction using Deep Learning" from Fathy Shalaby**

The bachelor thesis "Understanding Protein
Function Prediction using Deep Learning" from Fathy Shalaby was
written for people without any understanding in ML and had therefore
explanations for basic ML methods.

The thesis is about using deep learning to predict protein function and
used proteins from the database UniProt. Five different gene ontology
sections were used to train the model, where one was used for
prediction and the other four as auxiliary classes.

The text of this thesis was partially unstructured and difficult to
understand. Also there were some variables and parameters in
formulas, that were used but not described in the RNN chapter
(Introduction section).

On the plus side the code was implemented and functional, the results
were not great, but well described and analyzed. Additionally the
GitHub repository with the implemented code was provided.

In the results section there was a misinterpretation with the number of
iterations needed for convergence. Overall the results were described
thoroughly and with many different plots to show the performance of the
model.

If the mentioned downsides are adjusted I would recommend the
acceptance of this Bachelor thesis.

Helga Ludwig, MSc