

Tables supporting “Semiotic classification of neural network system diagrams”

Guy Marshall, Caroline Jay and André Freitas

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These tables provide additional detailed information to support the paper
“Semiotic classification of neural network system diagrams”.

Table 1: Neural network “Content” summary

CONTENT OR ATTRIBUTE	FREQ
SCOPE: ENTIRE SYSTEM	2.5%
SCOPE: NN SYSTEM CONTEXT	12.5%
SCOPE: NN SYSTEM ONLY	82.5%
SCOPE: LESS THAN ENTIRE NN SYSTEM	2.5%
DATA: EXPLICIT TRAINING CORPUS	2.5%
DATA: KNOWLEDGE BASE INDICATED	2.5%
DATA: LINGUISTIC RESOURCES INDICATED	5%
NL USAGE: LABELED LAYERS	47.5%
NL USAGE: LABELED WEIGHTS	17.5%
NL USAGE: LABELED CLASSIFIER METHOD (EG LSTM)	0%
NL USAGE: LABELED CLASSIFIER PURPOSE (EG NER)	0%
NL USAGE: FUNCTION (E.G. ”MEAN”)	0%
INPUT: EXPLICIT EXAMPLE	42.5%
OUTPUT: TENSOR	42.5%
OUTPUT: LABELLED	27.5%
OUTPUT: EXAMPLE	12.5%
OUTPUT: UNORTHODOX	25%
OPERATIONS: ICONIC TENSOR OP	10%
OPERATIONS: FUNCTION (E.G. ” \bar{x} ”)	0%
OPERATIONS: FORMULAE (E.G. ” $F(x) = Ax + B$ ”)	0%
DIMENSIONALITY: NUMERIC AND COMPLETE	2.5%
DIMENSIONALITY: VISUAL AND PARTIAL	45%
FEATURE LINGUISTIC (E.G. ”POS” OR ”SYNTACTIC”)	0%
FEATURE: EMBEDDING	45%

Table 2: Neural network “Diagrammatic” (visual and relational) summary

DIAGRAMMATIC CONCEPT OR ATTRIBUTE	FREQUENCY
STANDARD REPRESENTATION: UML OR OTHER	0%
TENSOR REP E.G. N STACKED CIRCLES	25%
TENSOR REP E.G. 1 CIRCLE	7.5%
TENSOR REP E.G. CIRCLES WITH ELLIPSIS	2.5%
TENSOR REP E.G. 1 SQUARE OR RECTANGLE	12.5%
TENSOR REP E.G. N STACKED SQUARES	10%
TENSOR REP E.G. \vec{h}_i	2.5%
TENSOR REP E.G. h_i	40%
SEMIOTIC: DIMENSIONAL REDUCTION E.G. 5 TO 2 BLOCKS	30%
SEMIOTIC: PARALLELISATION E.G. 3D	7.5%
SEMIOTIC: COLOURED	70%
SEMIOTIC: LOGO (E.G. WIKIPEDIA)	0%
SEMIOTIC: "... " TO REPRESENT SET	60%
SEMIOTIC: x_i TO REPRESENT SET	15%
ARROW: DIRECTIONAL	92.5%
ARROW: DOTTED	42.5%
ARROW: LABELED	12.5%
ARROW: COLOURED	25%
ARROW: CURVED	30%
GROUPING: SPATIAL	30%
GROUPING: (DOTTED) OUTLINE	0%
GROUPING: (DOTTED) AVENUES	0%
GROUPING: BRACKET	15%
EMPHASIS: DETAILING/CALLOUT/ZOOM/SUB-FIGURE	2.5%
KEY FEATURE: SHADING OR HIGHLIGHTING	2.5%
KEY FEATURE: BOXED	17.5%
KEY FEATURE: LABELED	7.5%
NL DESCRIPTION: LAYERS	40%
NL DESCRIPTION: INPUTS	37.5%
NL DESCRIPTION: PROCESSING	37.5%
NL DESCRIPTION: PROCESSING DATA ARRANGEMENT	5%
NL DESCRIPTION: FUNCTION (E.G. "SIGMOID")	0%
NL DESCRIPTION: OUTPUTS	27.5%
NL DESCRIPTION: SYSTEM PURPOSE	7.5%
NL DESCRIPTION: CAPTION OVER ONE SENTENCE LONG	60%
SHAPE: LINEAR LEFT-RIGHT	27.5%
SHAPE: LINEAR UPWARDS	25%
SHAPE: LINEAR DOWNWARDS	0%
SHAPE: PARALLEL LINEAR	0%
SHAPE: DISCONNECTED COMPONENTS OR SUBFIGURES	12.5%
SHAPE: BLOCK/MODULAR	10%
SHAPE: GAMMA (UP AND ACROSS)	0%
SHAPE: PI OR M (ONE "ACROSS", MULTIPLE "UPS")	0%
SHAPE: LINK-AND-CLUSTER	5%
SHAPE: NO OBVIOUS STRUCTURE	25%