

## A Appendix

### A1 Quality Scores of Related Studies

Table A1.1 shows the quality scores of each of the related studies which was evaluated in the quality assessment of SLR. The rows without scores did not pass the inclusion criterias. Therefore, their quality was not evaluated.

Table A1.1: Quality Scores of Related Studies

ID	QC 1	QC 2	QC 3	QC 4	QC 5	QC 6	QC 7	QC 8	QC 9	QC 10	Sum
SR1	1	1	1	1	1	0,5	1	0	0,5	1	8
SR2	1	1	1	1	1	1	1	1	0,5	1	9,5
SR3	1	1	0,5	0,5	1	1	1	0,5	1	1	8,5
SR4	1	1	1	1	1	1	1	1	1	1	10
SQ1	1	1	0,5	0,5	1	1	1	0,5	1	0,5	8
SQ2	1	1	1	1	0,5	1	1	1	1	1	9,5
SQ3	0,5	0,5	0,5	0	1	1	0	1	0,5	0,5	5
SQ4											0
SQ5	0,5	1	0,5	0	1	1	1	0	0,5	0,5	6
SQ6	1	1	1	1	1	1	0,5	0,5	1	1	9
SQ7	1	1	1	0,5	1	0,5	0,5	0,5	1	1	8
SQ8											0
SQ9	1	1	1	0,5	1	0,5	0,5	0	1	1	7,5
SQ10											0
SQ11	1	1	1	0,5	1	1	1	1	1	1	9,5
SQ12	1	1	1	0,5	0,5	0,5	1	0	1	1	7,5
SQ13	1	1	1	1	0,5	1	1	0	1	1	8,5
SQ14	1	1	1	1	0,5	1	1	0	1	1	8,5
SQ15	1	1	1	1	0,5	0,5	0,5	0	0,5	1	7
SQ16											0
SQ17	1	1	0,5	0	0,5	0,5	0,5	0	0,5	1	5,5
SQ18	1	1	1	0,5	0,5	0,5	1	0	1	1	7,5
SQ19	1	1	1	1	0,5	0,5	0,5	1	1	1	8,5
SQ20											0
SS1	0,5	1	0,5	0,5	0,5	0,5	0,5	0	0,5	0,5	5
SS2	1	1	1	1	0	0,5	1	0,5	1	1	8
SS3	1	1	0,5	1	1	1	0,5	0,5	1	1	8,5
SS4											0
SS5											0
SS6	1	1	0,5	1	0,5	0,5	0,5	0,5	0,5	0,5	6,5
SS7	1	1	1	1	0,5	1	0,5	1	1	1	9
SS8											0
SS9	1	1	1	0,5	0,5	1	1	1	1	1	9
SS10	1	1	1	1	0,5	0,5	1	0	1	1	8

SS11	0,5	1	1	1	1	1	1	0	1	1	8,5
SS12	0,5	1	1	0,5	0,5	1	0,5	0	1	1	7
SS13	1	1	1	1	0,5	1	1	0,5	1	1	9
SS14	1	1	0,5	1	0,5	0,5	1	1	1	1	8,5
SS15	1	1	1	1	0,5	0,5	0	0,5	1	1	7,5
SS16											0
SS17	1	1	1	1	0,5	0,5	0	0,5	1	1	7,5
SS18	0,5	0	1	0	0	0,5	0	0	0,5	0,5	3
SS19	1	1	1	0,5	0,5	1	0	1	0,5	1	7,5
SS20	1	1	1	1	0,5	0,5	1	1	1	1	9

## A2 Confusion Matrices

The following confusion matrices visualize which performers were distinguished by the models. Subsection A2.1 shows the resulting matrices from the reproducing of the Kernel Density Method with k-fold testing scheme. Subsection A2.2 shows the confusion matrices from the pianist classification task.

### A2.1 Reproduced KDE Method

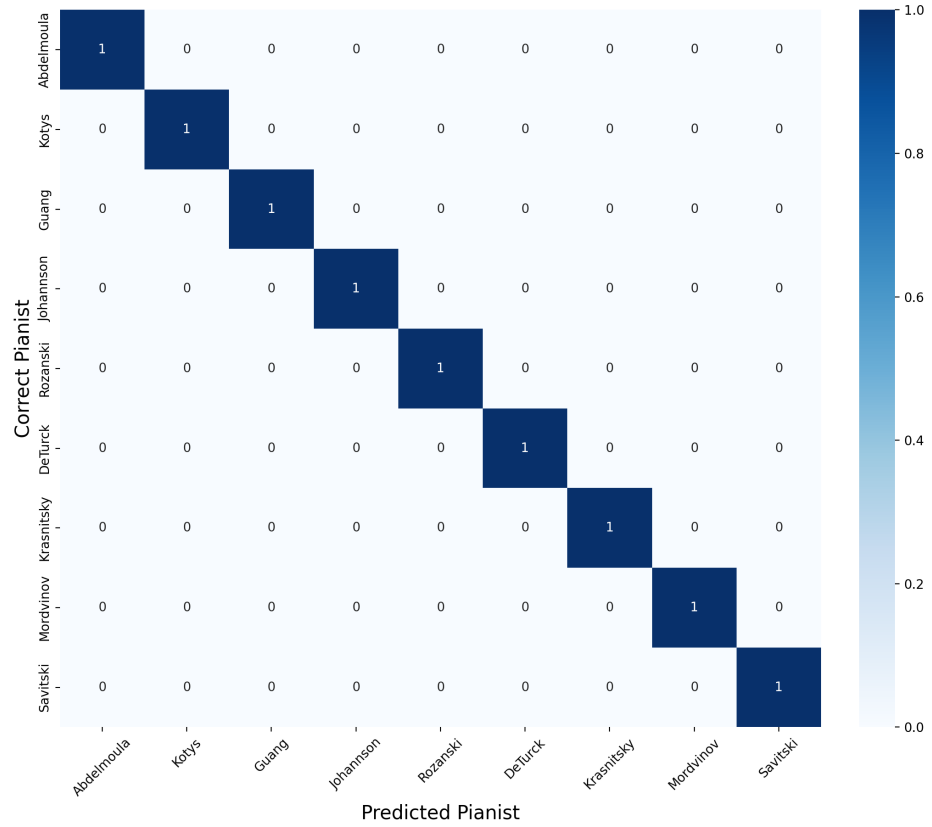


Figure A2.1: Optimized KDE method using Onset Time

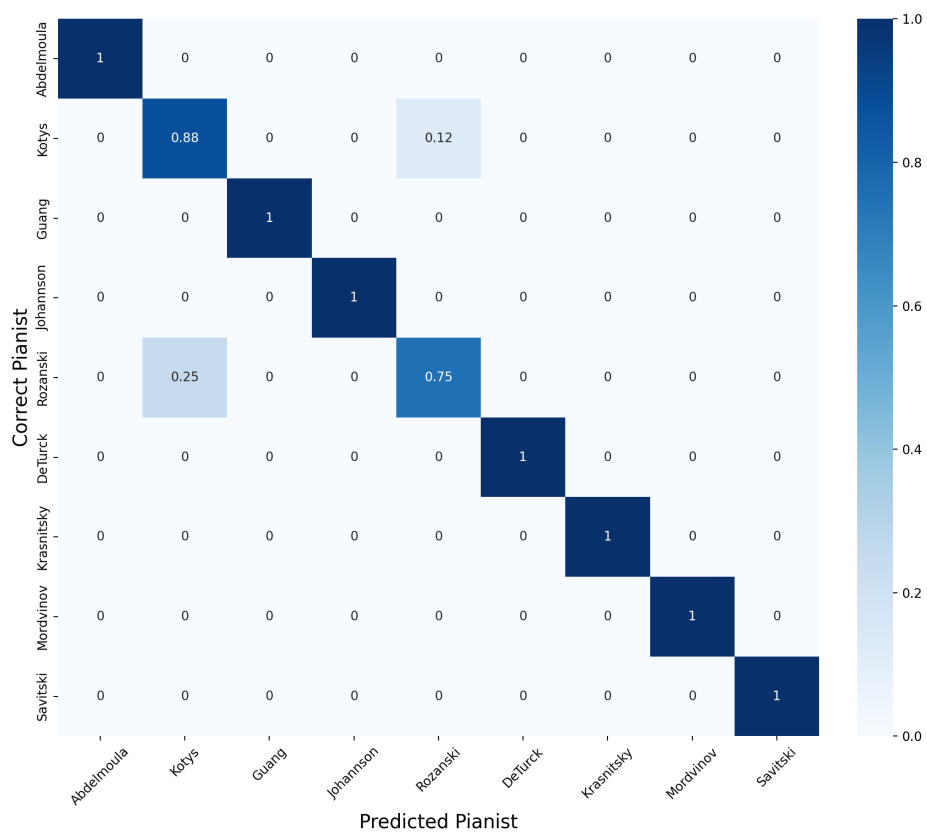


Figure A2.2: Optimized KDE method using Velocity

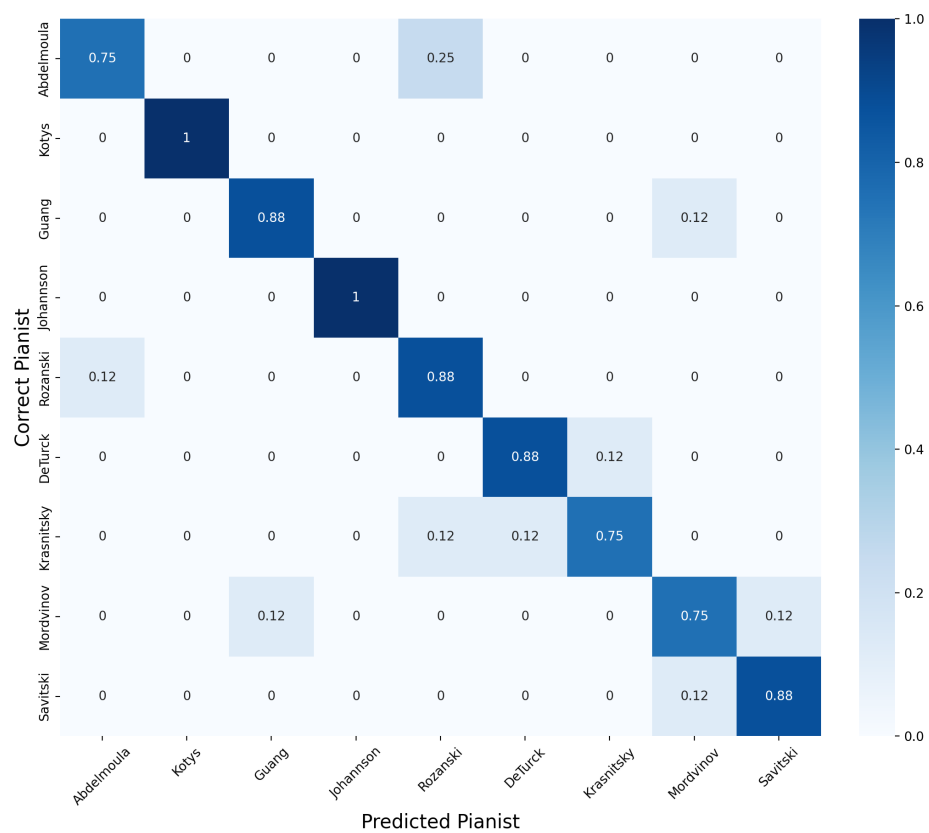


Figure A2.3: Optimized KDE method using Duration

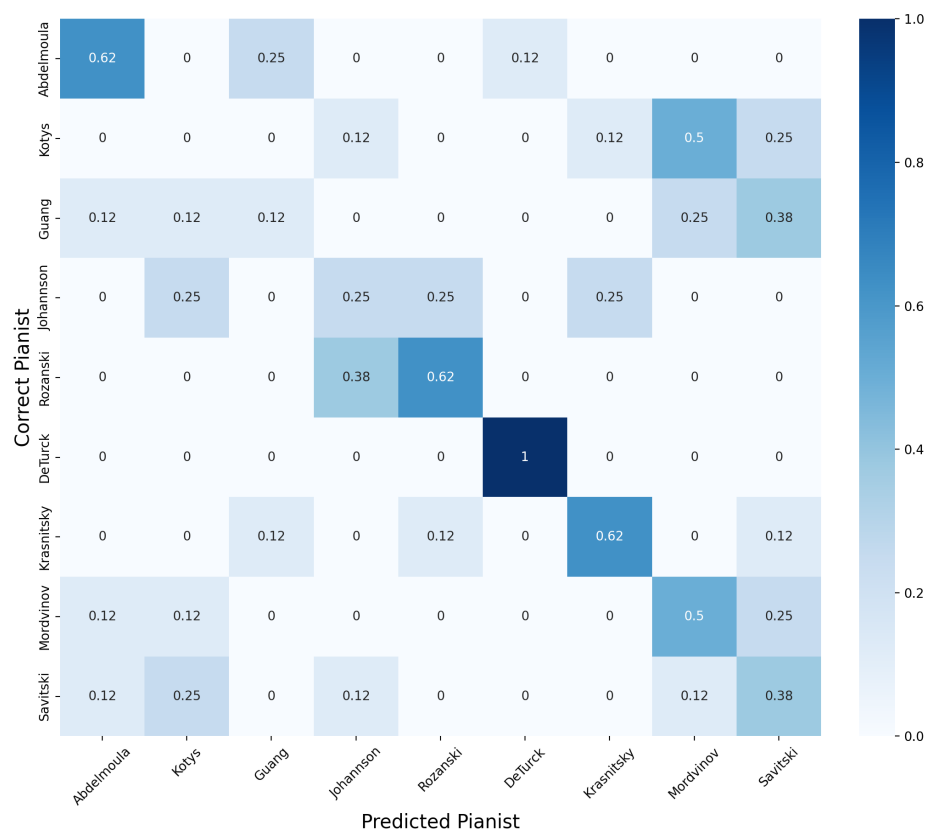


Figure A2.4: Optimized KDE method using Inter Onset Interval

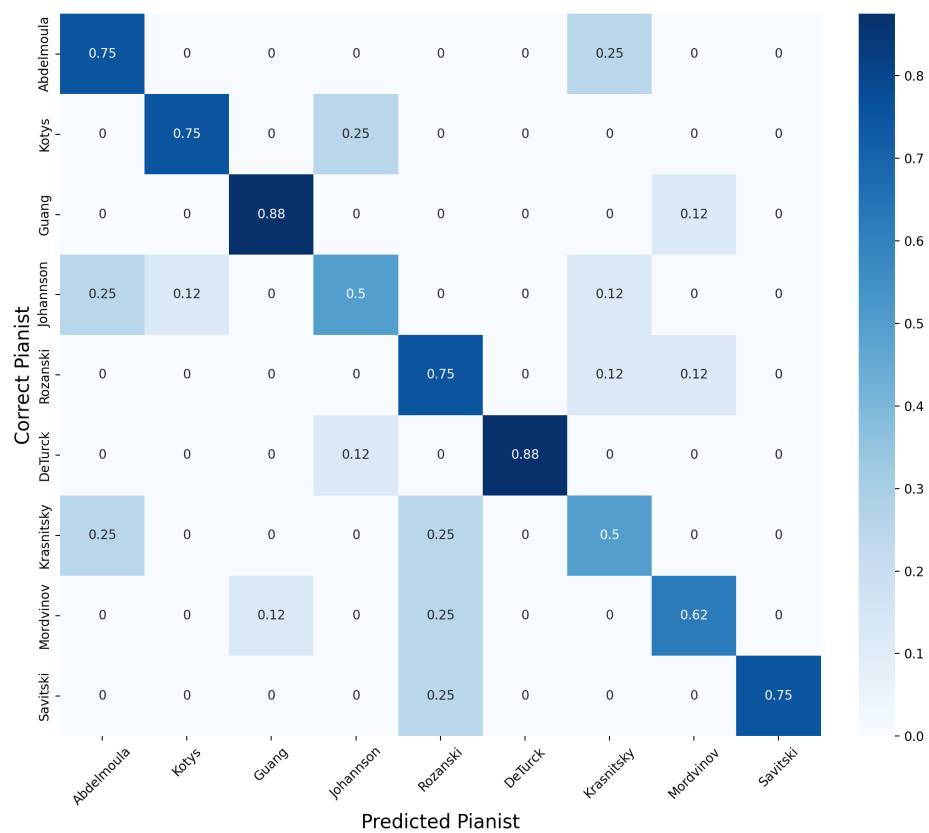


Figure A2.5: Optimized KDE method using Offset Time Duration

## A2.2 Pianist Classification Task

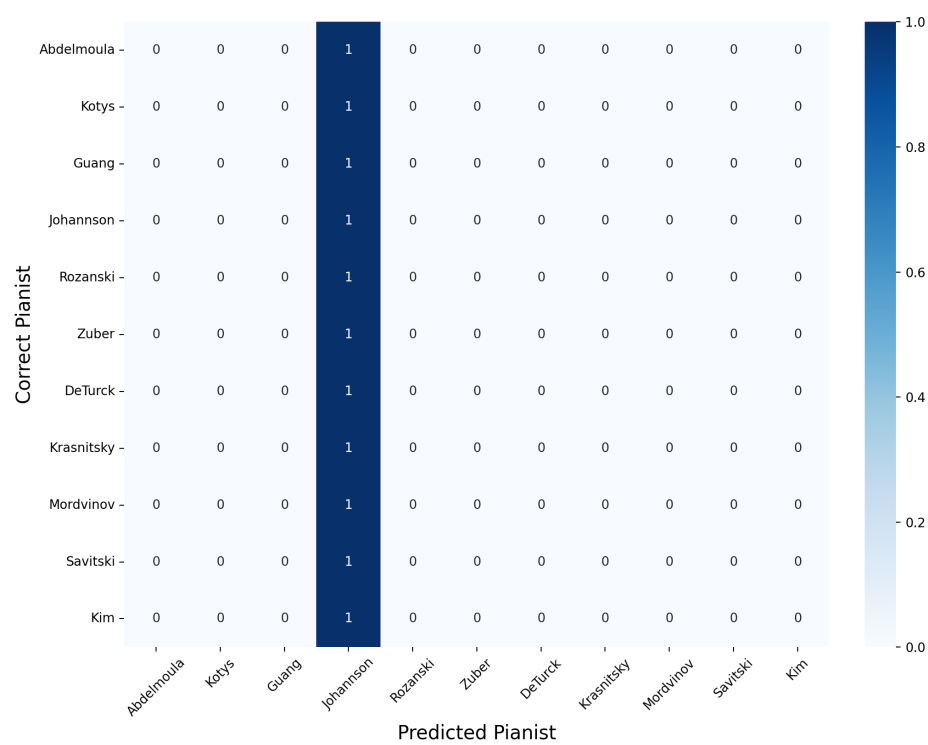


Figure A2.6: Confusion Matrix for the Baseline Model



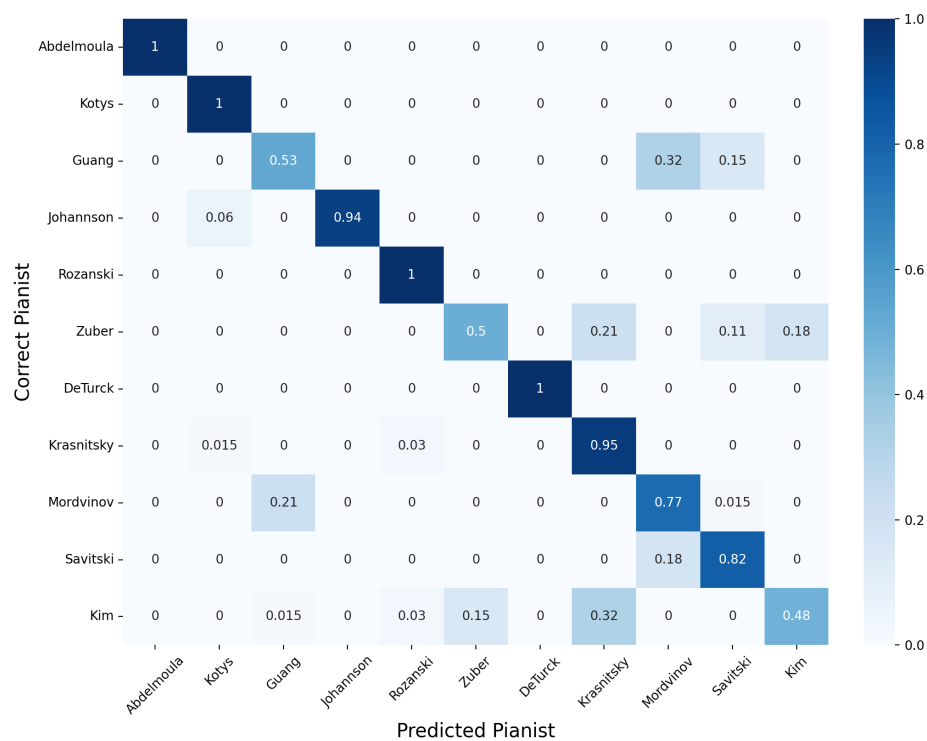


Figure A2.7: Confusion Matrix for the Best N2P Model

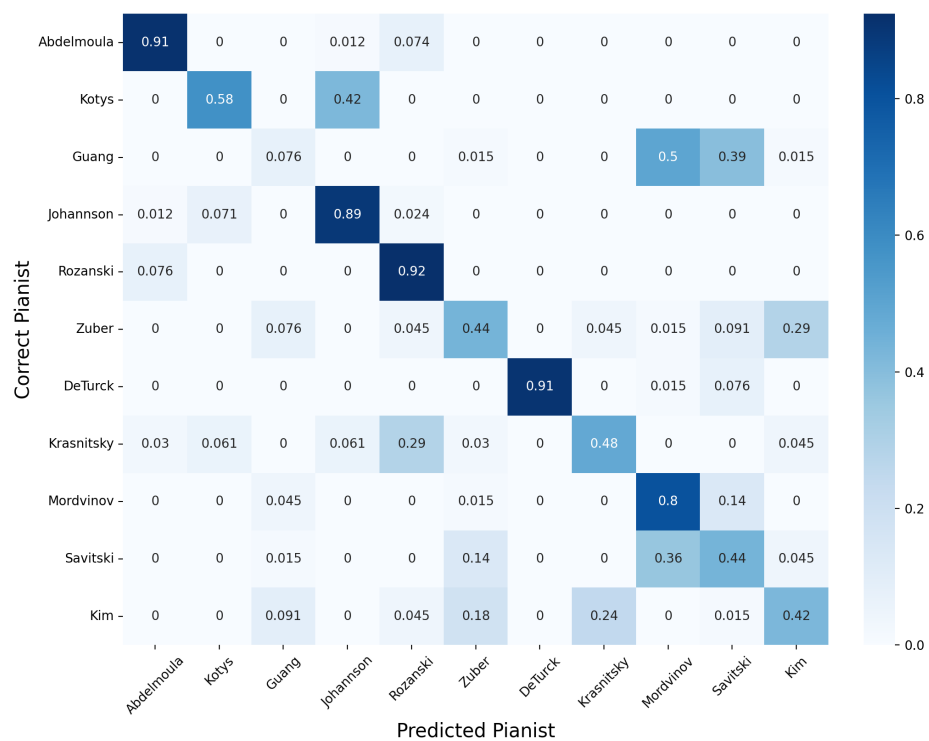


Figure A2.8: Confusion Matrix for Best N2M2P Model

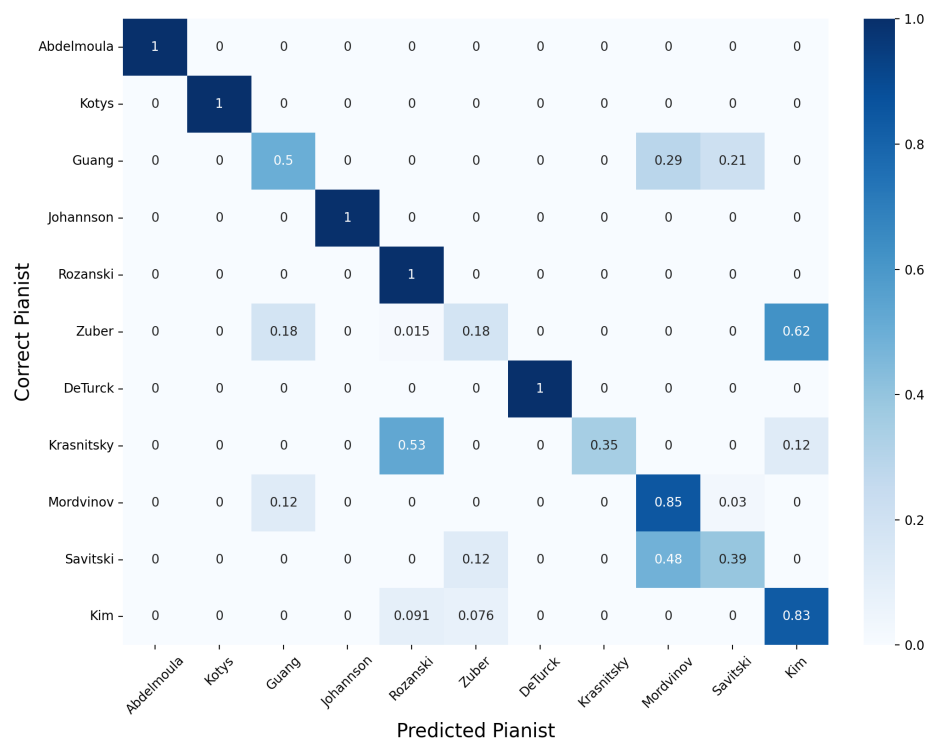


Figure A2.9: Confusion Matrix for Best N2MP Model

### A3 Model Parameters

This section presents the parameters for the best performing models. For Table A3.1 and Table A3.2, the following abbreviations are used for the parameters:

- RN - Nodes per RNN layer
- RL - Amount of RNN layers
- DO - Dropout
- LN - Nodes per linear layer
- LL - Amount of linear layers

Table A3.1: Model Parameters for Best N2M Models

RNN	Deviation	Time	RN	RL	DO	LN	LL
GRU	Average	End	363	1	0,862	375	2
LSTM	Average	Int	34	4	0,760	79	4
LSTM	Average	End	49	1	0,503	47	3
GRU	Average	Int	69	1	0,044	235	4
GRU	Score	End	13	5	0,634	195	4
LSTM	Score	Int	13	5	0,416	47	3
GRU	Score	Int	14	5	0,618	321	4
LSTM	Score	End	128	3	0,366	16	3

Table A3.2: Model Parameters for Best N2P Models

RNN	Deviation	Time	RN	RL	DO	LN	LL
GRU	Average	End	435	2	0,575	15	3
GRU	Average	Int	535	3	0,012	336	2
LSTM	Average	End	749	3	0,020	893	5
LSTM	Average	Int	532	2	0,202	265	2
GRU	Score	Int	930	2	0,110	206	1
GRU	Score	End	438	3	0,146	415	2
LSTM	Score	End	504	3	0,381	108	3
LSTM	Score	Int	504	3	0,381	108	3

For Table A3.3 and Table A3.4, the following abbreviations are used for the parameters:

- RRN - Nodes per RNN layer for the regressor
- RRL - Amount of RNN layers for the regressor
- RDO - Dropout for the regressor
- RLN - Nodes per linear layer for the regressor
- RLL - Amount of linear layers for the regressor
- CN - Nodes per linear layer for the classifier
- CL - Amount of linear laayers for the classifier

Table A3.3: Model Parameters for Best N2M2P Models

RNN	Deviation	N2M	M2P	RRN	RRL	RDO	RLN	RLL	CN	CL
GRU	Avg	End	Int	363	1	0,862	375	2	644	4
GRU	Avg	End	End	363	1	0,862	375	2	525	3
LSTM	Avg	End	End	49	1	0,503	47	3	484	4
LSTM	Avg	End	Int	49	1	0,503	47	3	484	4
GRU	Avg	Int	Int	69	1	0,044	235	4	988	4
GRU	Avg	Int	End	69	1	0,044	235	4	644	3
LSTM	Avg	Int	End	34	4	0,760	79	4	125	5
GRU	Score	Int	Int	14	5	0,618	321	4	71	3
LSTM	Avg	Int	Int	34	4	0,760	79	4	25	5
GRU	Score	End	Int	13	5	0,634	195	4	299	5
GRU	Score	Int	End	14	5	0,618	321	4	64	3
GRU	Score	End	End	13	5	0,634	195	4	241	5
LSTM	Score	End	Int	128	3	0,366	16	3	849	4
LSTM	Score	Int	Int	13	5	0,416	47	3	957	5
LSTM	Score	End	End	128	3	0,366	16	3	849	4
LSTM	Score	Int	End	13	5	0,416	47	3	957	5

Table A3.4: Model Parameters for Best N2MP Models

RNN	Selection	Deviation	Save	RRN	RRL	RDO	RLN	RLL	CN	CL
LSTM	Comb	Average	$R^2$	677	2	0,235	114	3	495	2
LSTM	Comb	Average	Acc	677	2	0,235	114	3	495	2
GRU	Acc	Average	End	32	2	0,613	49	3	241	3
LSTM	Comb	Average	End	677	2	0,235	114	3	495	2
GRU	Acc	Average	Acc	32	2	0,613	49	3	241	3
LSTM	$R^2$	Average	$R^2$	721	5	0,305	112	2	501	2
GRU	$R^2$	Score	$R^2$	948	2	0,584	652	4	990	5
LSTM	Comb	Score	$R^2$	817	3	0,564	133	2	418	1
LSTM	$R^2$	Average	End	721	5	0,305	112	2	501	2
GRU	Acc	Average	$R^2$	32	2	0,613	49	3	241	3
LSTM	$R^2$	Average	Acc	721	5	0,305	112	2	501	2
LSTM	Acc	Average	Acc	507	5	0,277	231	2	389	1
GRU	$R^2$	Score	Acc	948	2	0,584	652	4	990	5
GRU	Acc	Score	Acc	982	4	0,272	209	4	772	3
LSTM	Acc	Average	$R^2$	507	5	0,277	231	2	389	1
GRU	$R^2$	Score	End	948	2	0,584	652	4	990	5
GRU	Comb	Average	End	28	1	0,267	39	2	226	2
LSTM	Comb	Score	End	817	3	0,564	133	2	418	1
GRU	$R^2$	Average	Acc	674	1	0,524	177	4	276	3
GRU	Comb	Average	Acc	28	1	0,267	39	2	226	2
GRU	$R^2$	Average	End	674	1	0,524	177	4	276	3
LSTM	Comb	Score	Acc	817	3	0,564	133	2	418	1
GRU	Comb	Average	$R^2$	28	1	0,267	39	2	226	2
GRU	$R^2$	Average	$R^2$	674	1	0,524	177	4	276	3
GRU	Comb	Score	Acc	101	5	0,293	229	1	654	3
LSTM	$R^2$	Score	Acc	738	3	0,741	124	2	573	1
GRU	Acc	Score	End	982	4	0,272	209	4	772	3
LSTM	Acc	Average	End	507	5	0,277	231	2	389	1
GRU	Comb	Score	End	101	5	0,293	229	1	654	3
GRU	Acc	Score	$R^2$	982	4	0,272	209	4	772	3
LSTM	$R^2$	Score	End	738	3	0,741	124	2	573	1
LSTM	Acc	Score	Acc	921	3	0,628	139	2	537	1
LSTM	$R^2$	Score	$R^2$	738	3	0,741	124	2	573	1
GRU	Comb	Score	$R^2$	101	5	0,293	229	1	654	3
LSTM	Acc	Score	End	921	3	0,628	139	2	537	1
LSTM	Acc	Score	$R^2$	921	3	0,628	139	2	537	1