

MULTIPLE SEQUENCE ALIGNMENT FOR ANTIMICROBIAL RESISTANCE

Team QTON

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The background features a series of concentric circles in light gray, some solid and some dashed, creating a ripple effect. In the center, there is a red speech bubble with a white outline. The text is contained within this bubble.

Content

Introduction

Methods & Strategies

Results

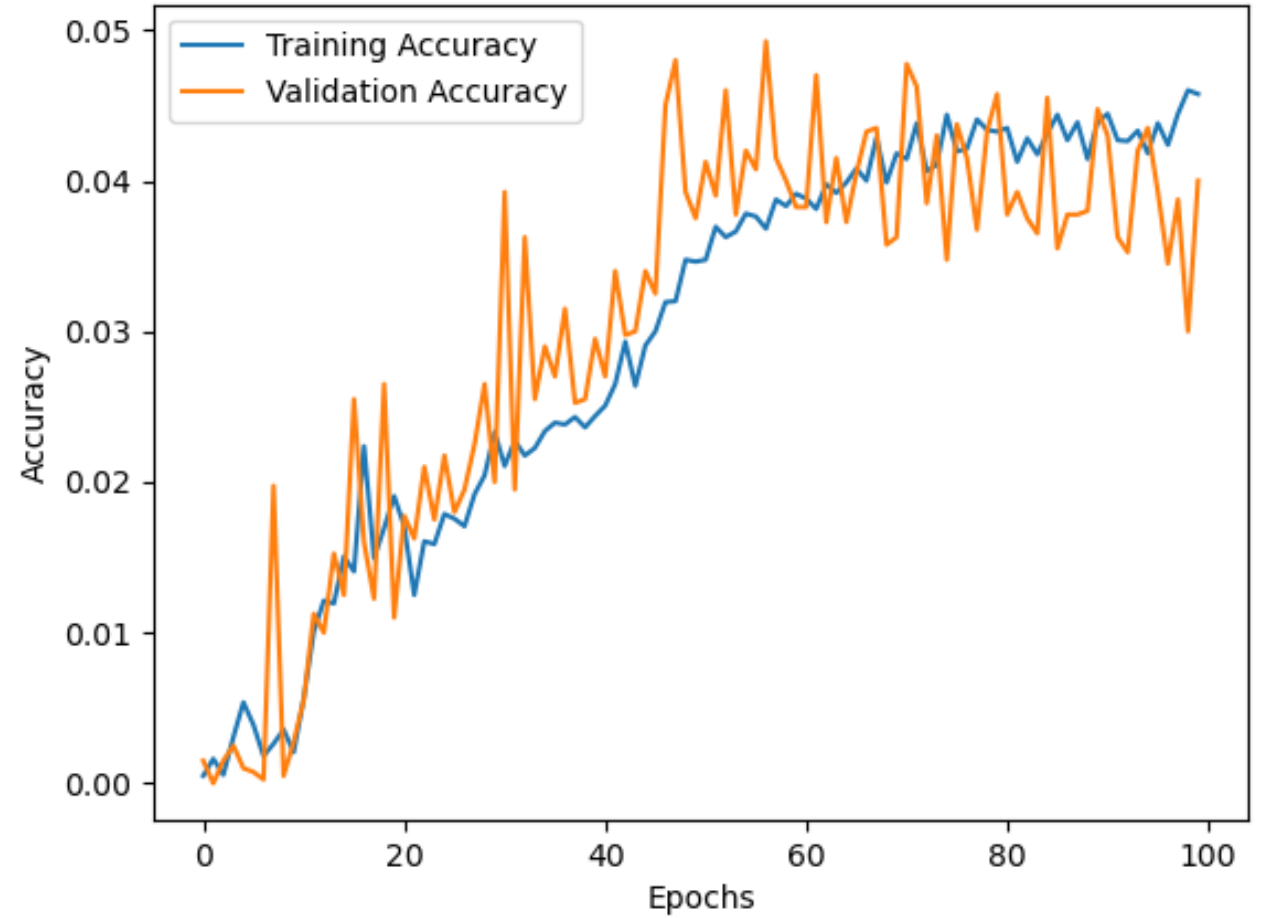
Conclusion

BORDERLANDS SCIENCE

Introduction:
MSA for AMR

OBJECTIVE: Train a model to
make optimal moves

FCNN Strategy 1



Method Strategy 2

- generate the index of valued index for each sequence and each position

start						
-	-	-	-	-	-	('-', 'C')
-	-	-	-	-	-	('T', 'G')
-	-	-	-	-	-	('G', 'T')
T	T	T	T	T	T	('A', 'C')
G	T	C	G	A	C	('A', 'C')
A	G	G	C	T	A	('A', 'C')
A	A	A	C	A	A	('-', 'T')
T	A	A	C	A	A	

Method Strategy 2

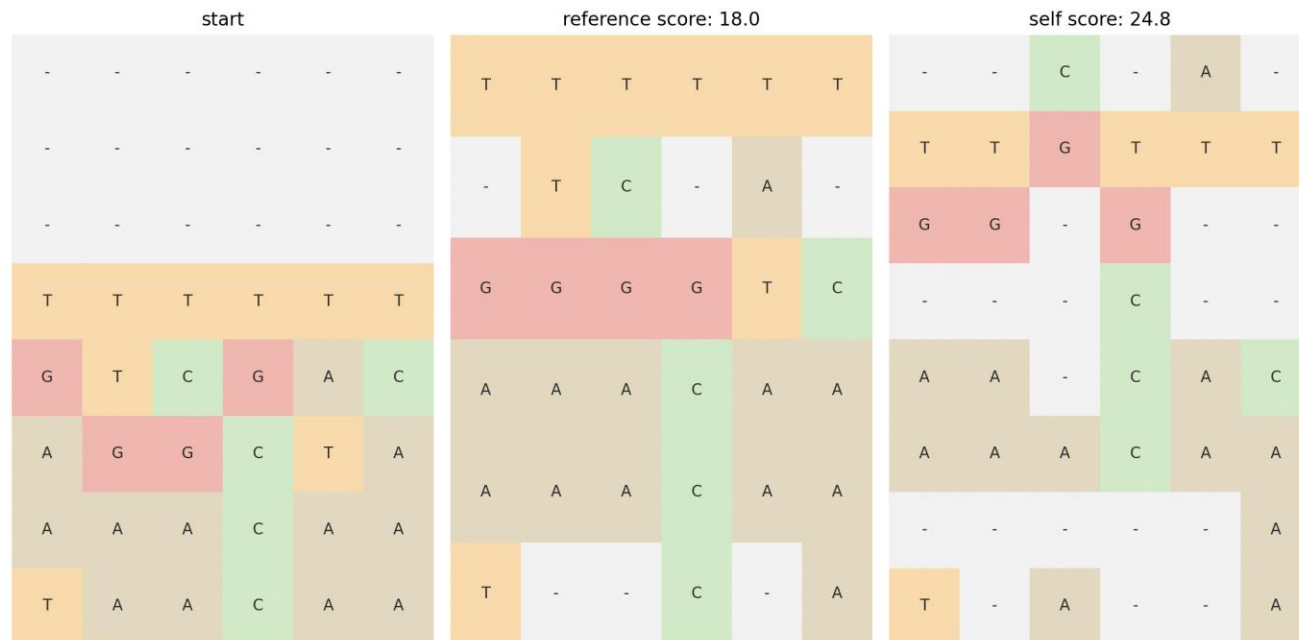
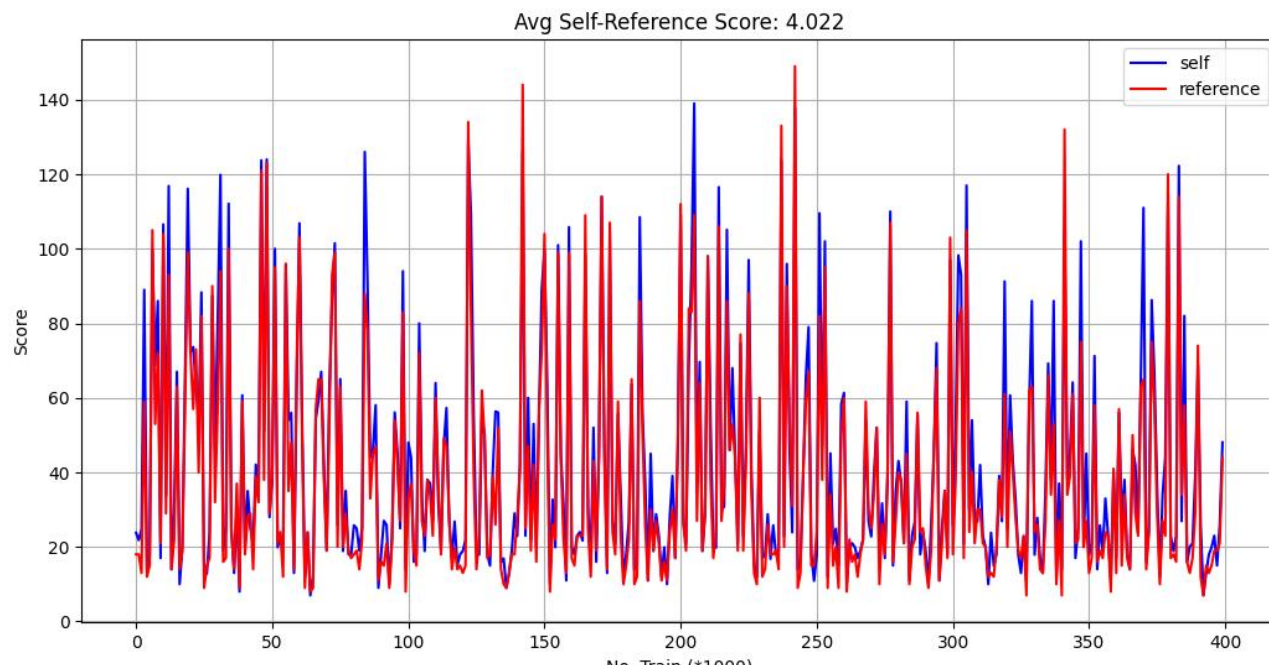
- repeat for each position, try each no valued sequence

	0	1	2	3	4	5
0	1.00000	0.00000	0.00000	0.00000	0.00000	0.00000
1	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	1.00000	0.00000	0.00000	1.00000	0.00000	1.00000
3	0.00000	0.00000	1.00000	0.00000	1.00000	1.00000
4	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
5	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
6	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
7	1.00000	1.00000	1.00000	1.00000	1.00000	1.00000

- for example:
 - column (position) 0;
 - try sequence 1,3,4,5,6,
 - calculate the score 9,9,9,9,9
 - select maximum sequence 1, select step (2,0), if score increase keep this step, other wise, discard.

Results

Train data: on average, our score
higher than reference score



Results

Test data

- ...
- Test.26 Score: 37
- Test.27 Score: 61.65
- Test.28 Score: 123.25
- Test.29 Score: 89
- Test.30 Score: 14
- Test.31 Score: 12
- Test.32 Score: 42.15
- Test.33 Score: 84
- Test.34 Score: 18.9
- Test.35 Score: 22.9
- Test.193 Score: 59
- Test.194 Score: 59
- Test.195 Score: 19.9
- Test.196 Score: 118
- Test.197 Score: 18.9
- Test.198 Score: 19.9
- Test.199 Score: 69
- Test.200 Score: 90
- Test.201 Score: 90
- Test.202 Score: 95
- ...

A red speech bubble graphic with a white outline, pointing downwards. The word "Conclusion" is written in white text inside the bubble.

Conclusion

- **Data Handling and Feature Engineering**
- **Model Development**
- **Puzzle Solving**
- **Expectations**

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Thank you
Q&A