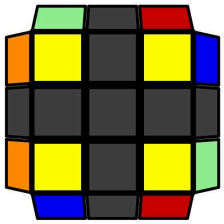
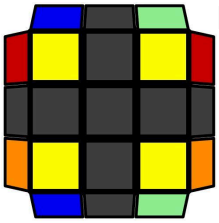
At least two algorithms are listed for every case. The first one will preserve edge orientation and the second one will flip edges. **The bolded algorithm will be the one that I can execute the fastest, so if you are learning CMLL, I recommend learning the bolded ones first. Additional algs will be below**. If you find any mistakes, or any better algorithms than the one I use, please contact me on Facebook or YouTube.
Video showing execution: http://bit.ly/2j5WX86

O



Adjacent Swap

R U R' F' R U R' U' R' F R2 U' R'
r U R' F' R U R' U' R' F R2 U' r'
R U R' U' R' F R2 U' R' U' R U R' F'
r U R' U' r' F R2 U' R' U' R U R' F'
(U) r U' L U2 R' U R U2 r' L'



Diagonal Swap

F R U' R' U' R U R' F' R U R' U' R' F R F'
r2 D r' U r D' R2 U' F' U' F
r' U' r' D' r U' r' D r U r' D' r U r' D r2
F R U' R' U' R U R' F' r U R' U' r' F R F'
F R' F R2 U' R' U' R U R' F' R U R' U' F'

H



Columns

R U2 R' U' R U R' U' R U' R'
r U2 R' U' R U R' U' R U' r'
(U) R U R' U R U' R' U R U2' R'
r U' r' U' r U r' U r U r'



Rows

F R U R' U' R U R' U' R U R' U' F'
R' F R U2' R' F' R U F R U R' U F'



Column

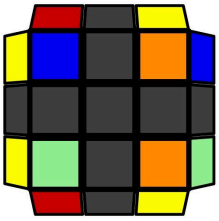
(U) F R U' R' U R U2 R' U' R U R' U' F'
(U) R U2' R2' F R F' U2 R' F R F'



Row

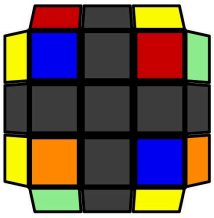
(U') R U R' U R U r' F R' F' r
(U2) r U' r2' D' r U' r' D r2 U r'
r U' r' F U2' r2' F r U' r

Pi



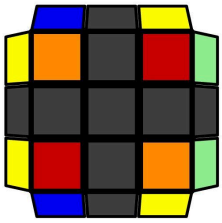
Right Bar

R U2' R2' U' R2 U' R2' U2' R
F R U R' U' R U R' U' F'
f R U R' U' R U R' U' f'
(U2) F U R U' R' U R U' R' F'
(U2) F' L' U' L U L' U' L U F
r' U r2 U' r2' U' r2 U r'
r U' r2' U r2 U r2' U' r
R' U2 r U' r' U2 r U r' U2 R



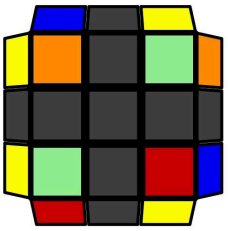
Back Slash

(U) F U R U' R' U R U' R2' F' R U R U' R'
(U) F R' F' R U2 R U' R' U R U2' R'
(U) R U2 R' U' R U' R2 U L U' R U L'



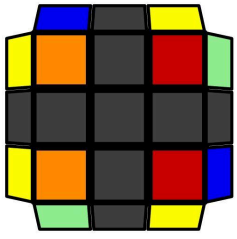
X Checkerboard

R' F2 D R2 U' R2' D' F2 R
(U') R' F R U F U' R U R' U' F'



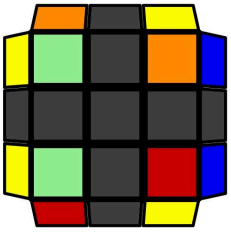
Forward Slash

R U R' U' R' F R2 U R' U' R U R' U' F'
R U2 R' U' R U R' U2' R' F R F'
(U') R' U2 R U R' U R2 U' L' U R' U' L



Columns

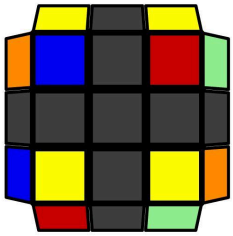
(U2) r' F R F' r U' R' U' R U' R'
(U') r U' r2' D' r U r' D r2 U r'
(U2) R' U R U' R2' F R2 U R' U' F' R
R' U L U' R U' L' U' L U' L'



Left Bar

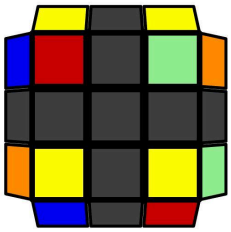
(U) R U2 R' U' F' R U2 R' U' R U' R' F R U' R'
(U') R' U' R' F R F' R U' R' U2 R
(U2) R' U' R U' R' U F' U F R

U



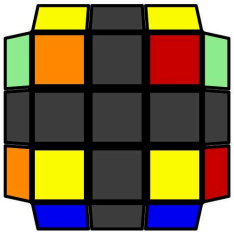
Forward Slash

(U2) R2 D R' U2 R D' R' U2 R'
r U' r' U' r U' r' U' F' U2' F



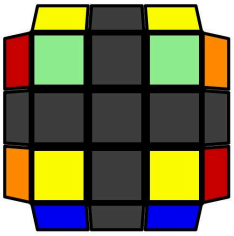
Back Slash

R2' D' R U2 R' D R U2 R
R' F R U R' F R U F U2' F'



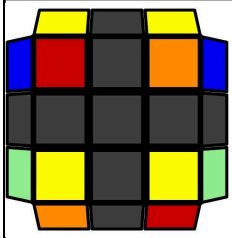
Front Row

(U) R U2' R2' U' R2 U' R' U R' U' R U R' U R
R2' F U' F U F2 R2 U' R' F R
R' U' R U' R' U2' R2 U R' U R U2' R'



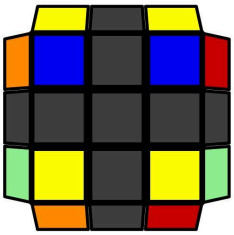
Rows

R' F R U' R' U' R U R' F' R U R' U' R' F R F' R
(U') F R2 D R' U R D' R2' U' F'



X Checkerboard

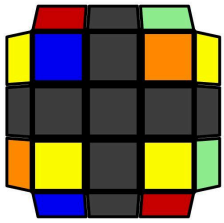
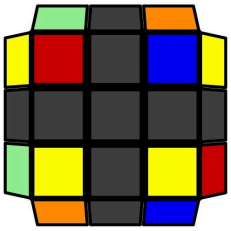
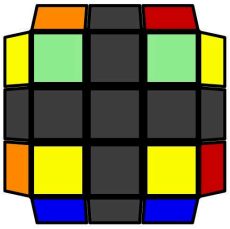
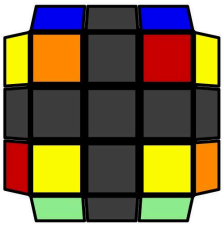
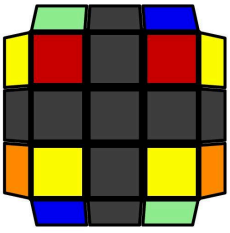
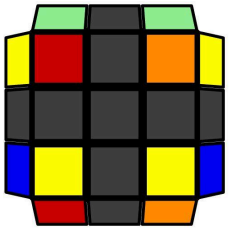
R U R' U' R' F2 R2 U' R' U' R U R' F2
(U2) r U' r' U r' D' r U' r' D r
(U2) R' F U' R F R' U R F'
(U') R' D R U' R U' R' U R' D' R
r' U r' D' r U r' D r U' r



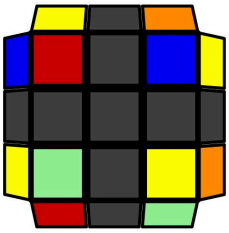
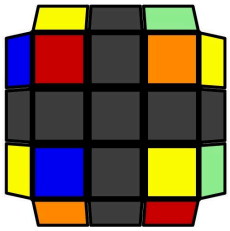
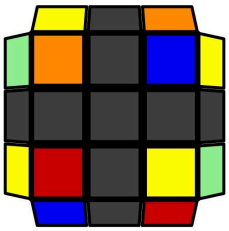
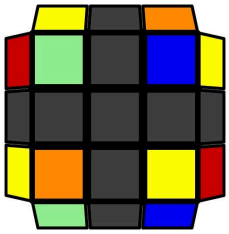
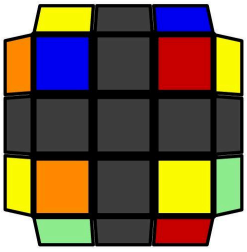
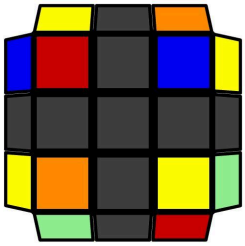
Back Row

R U' R' U' R U R D R' U R D' R2
(U') F R U R' U' F'
(U') f R U R' U' f'
(U) F U R U' R' F'

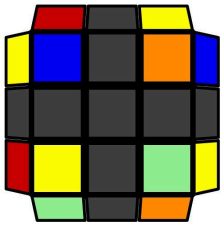
T

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Left Bar
(U') r U R' U' r' F R F'
(U') R U R' U' R' F R F'</td>
<td>
Right Bar
(U) l' U' L U l F' L' F
(U) L' U' L U L F' L' F
(U’) F R U’ R’ U R U R’ F’</td>
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Rows
(U)' R U R' U R U' R' U R' U' R2 U' R2' U2' R
F R' F R2 U' R' U' R U R' F2
R U2’ R’ U’ R U’ R2’ U2’ R U R’ U R</td>
<td>
Front Row
R' U r U2’ R2’ F R F' r
r' U r U2’ R2’ F R F' R</td>
</tr>
<tr>
<td>
Back Row
(U2) F R U R' U' R U' R' U' R U R' F'
r' D' r U r' D r U' r U r'
(U) R’ D R U’ R U R’ U R’ D’ R
r U’ r D r’ U r D’ r’ U r’</td>
<td>
Columns
R' U R2 D r' U2 r D' R2’ U' R
(U2) r2’ D' r U r' D r2 U' r' U' r
(U2) r U' r2' D' r U2 r' D r2 U r'</td>
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S

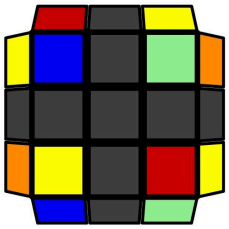
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Left Bar
(U) R U R' U R U2 R'
(U) r U R' U R U2 r'</td>
<td>
X Checkerboard
(U) L' U2 L U2’ l F' L' F M'
(U) L' U2 L U2’ L F' L' F</td>
</tr>
<tr>
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Forward Slash
(U) M F R' F' R U2 R U2’ r'
(U) F R' F' R U2 R U2’ R'</td>
<td>
Columns
(U) R U R' U' R' F R F' R U R' U R U2’ R'
R U R’ U R U’ R D R’ U’ R D’ R2’</td>
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<tr>
<td>
Right Bar
(U') R U R' U L' U R U' L U2 R'
(U') R U R' U R' F R F' R U2’ R'</td>
<td>
Back Slash
(U) R U' L' U R' U' L
(U) r U' r’ F R’ F’ R
(U') L U' R' U L' U' R</td>
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As



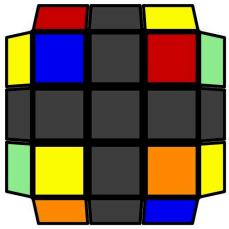
Right Bar

(U) R' U' R U' R' U2’ R
(U) r' U' R U' R' U2’ r
(U2) R U2 R' U' R U' R'



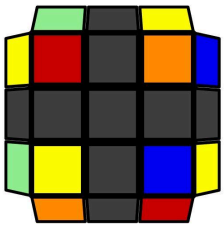
Columns

(U') R2 D R' U R D' R' U R' U' R U' R'
(U') r R D R' U R D' R' U R' U' R U' r'



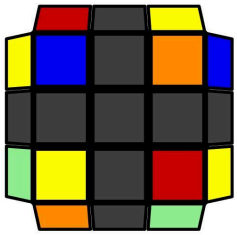
Back Slash

(U') M F' L F L' U2’ L' U2 L M'
(U') F' L F L' U2’ L' U2 L



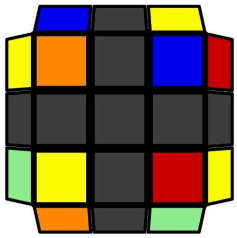
X Checkerboard

(U') R U2’ R' U2 r' F R F' M'
(U') R U2’ R' U2 R' F R F'



Forward Slash

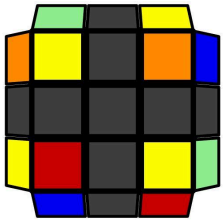
(U') L' U R U' L U R'
(U') R' F R F' r U r'
(U) R' U L U' R U L'

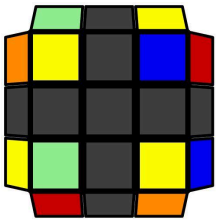


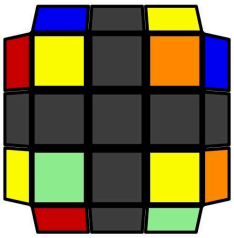
Left Bar

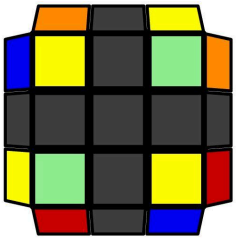
(U') R' U' R U' L U' R' U L' U2 R
R' U' R U' R' U R' F R F' U R

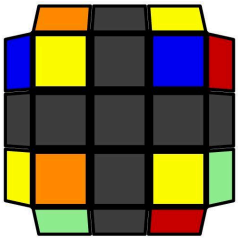
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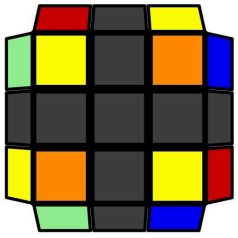
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Mirror

R2' D' R U' R' D R U R
(U2) F R U' R' U' R U R' F'
(U') F' r U r' U' r' F r
(U') F' r U R' U' r' F R</td>
<td>
Inverse

(U2) F R' F' r U R U' r'
(U2) F R' F' R U R U' R'</td>
</tr>
<tr>
<td>
Pure

R U2 R' U' R U R' U' R U R' U' R U' R'
R U R' U' R' F R F' R' F R F' r U r'
R U R' U R U' R' U R U' R' U R U2 R'</td>
<td>
Front Commutator

(U2) R U2 R D R' U2 R D' R2'
R U R' U R' F R F' U2 R' F R F'
(U2) R U R' U' F' U2' F U R U R'</td>
</tr>
<tr>
<td>
Diag

R' U' R U R' F' R U R' U' R' F R2
(U2) R U2' R2' F R F' R U2' R'
(U2) r U2' R2' F R F' R U2' r'</td>
<td>
Back Commutator

(U) R' U2 R' D' R U2 R' D R2
(U2) R U R' U' R' F R2 U' R' U R U R' F'</td>
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