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| **Step** | **Operation** | **Output Dimension** |
| Input layer | One-Hot encoding | 3874x13 |
| Convolutional Layer 1 | Conv1D (54,6) | 3869x54 |
| Activation (ReLU) | 773x54 |
| Max-Pooling1D | 773x54 |
| Dropout (0.5) | 773x54 |
| Convolutional Layer 2 | Conv1D (27,3) | 773x27 |
| Activation (ReLU) | 773x27 |
| Max-Pooling1D | 257x27 |
| Convolutional Layer 3 | Conv1D (14,2) | 257x14 |
| Activation (ReLU) | 257x14 |
| Max-Pooling1D | 85x14 |
| Dropout (0.2) | 85x14 |
| Convolutional Layer 4 | Conv1D(7,2) | 85x7 |
| Activation(ReLU) | 85x7 |
| Max-Pooling1D | 28x7 |
| Bidirectional (512) | 1027 |
| Dropout (0.01) | 1024 |
| Dense layer 1 | Dense (256) | 256 |
| Activation (ReLU) | 256 |
| Dense layer 2 | Dense (128) | 128 |
| Activation (ReLU) | 128 |
| Dense layer 3 | Dense (64) | 64 |
| Activation (ReLU) | 64 |
| Dense layer 4 | Dense (32) | 32 |
| Activation (ReLU) | 32 |
| Dense layer 5 | Dense (16) | 16 |
| Activation (ReLU) | 16 |
| Dense layer 6 | Dense (5) | 5 |
| Activation (SoftMax) | 5 |
| Flatten layer | Flatten | 5 |
| **Parameters** | | |
| Total parameters  Trainable parameters | 1,916,397 |  |
| 1,916,397 |  |

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| Step | Operation | Output Dimensions |
| Input layer | One-Hot encoding |  |
| Convolutional Layer 1 | Conv1D(54,6) | 3869, 54 |
| Activation(ReLU) |  |
| Max-Pooling1D |  |
| Dropout(0.5) |  |
| Convolutional Layer 1 |  |  |
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