## SemEval-2016 Task 3: Community Question Answering

Preslav Nakov Lluís Màrquez Walid Magdy Alessandro Moschitti ALT Research Group, Qatar Computing Research Institute

## **James Glass**

MIT Computer Science and Artificial Intelligence Laboratory

**Bilal Randeree** 

**Qatar Living** 

	Submission	MAP	AvgRec	MRR	P	R	F1	Acc
1	Kelp-primary	<b>79.19</b> <sub>1</sub>	<b>88.82</b> <sub>1</sub>	<b>86.42</b> <sub>1</sub>	<b>76.96</b> <sub>1</sub>	<b>55.30</b> <sub>8</sub>	<b>64.36</b> <sub>5</sub>	<b>75.11</b> <sub>2</sub>
	ConvKN-contrastive1	78.71	88.98	86.15	77.78	53.72	63.55	74.95
	SUper_team-contrastive1	77.68	88.06	84.76	75.59	55.00	63.68	74.50
2	ConvKN-primary	<b>77.66</b> <sub>2</sub>	$88.05_{3}$	$84.93_4$	$75.56_2$	<b>58.84</b> <sub>6</sub>	$66.16_2$	$75.54_1$
3	SemanticZ-primary	<b>77.58</b> <sub>3</sub>	$\pmb{88.14}_2$	$85.21_2$	$74.13_4$	<b>53.05</b> <sub>10</sub>	$61.84_{8}$	$73.39_5$
	ConvKN-contrastive2	77.29	87.77	85.03	74.74	59.67	66.36	75.41
4	<b>ECNU-primary</b>	$77.28_4$	$87.52_5$	<b>84.09</b> <sub>6</sub>	<b>70.46</b> <sub>6</sub>	$63.36_4$	$66.72_1$	$74.31_4$
	SemanticZ-contrastive1	77.16	87.73	84.08	75.29	53.20	62.35	73.88
5	SUper_team-primary	<b>77.16</b> <sub>5</sub>	$87.98_4$	<b>84.69</b> <sub>5</sub>	<b>74.43</b> <sub>3</sub>	<b>56.73</b> <sub>7</sub>	$64.39_4$	$74.50_{3}$
	MTE-NN-contrastive2	76.98	86.98	85.50	58.71	70.28	63.97	67.83
	SUper_team-contrastive2	76.97	87.89	84.58	74.31	56.36	64.10	74.34
	MTE-NN-contrastive1	76.86	87.03	84.36	55.84	77.35	64.86	65.93
	SLS-contrastive2	76.71	87.17	84.38	59.45	67.95	63.41	68.13
	SLS-contrastive1	76.46	87.47	83.27	60.09	69.68	64.53	68.87
6	MTE-NN-primary	<b>76.44</b> <sub>6</sub>	<b>86.74</b> <sub>7</sub>	<b>84.97</b> <sub>3</sub>	<b>56.28</b> <sub>9</sub>	<b>76.22</b> <sub>1</sub>	<b>64.75</b> <sub>3</sub>	<b>66.27</b> <sub>8</sub>
7	SLS-primary	<b>76.33</b> <sub>7</sub>	<b>87.30</b> <sub>6</sub>	<b>82.99</b> <sub>7</sub>	<b>60.36</b> <sub>8</sub>	<b>67.72</b> <sub>3</sub>	<b>63.83</b> <sub>6</sub>	<b>68.81</b> <sub>7</sub>
	ECNU-contrastive2	75.71	86.14	82.53	63.60	66.67	65.10	70.95
	SemanticZ-contrastive2	75.41	86.51	82.52	73.19	50.11	59.49	72.26
	ICRC-HIT-contrastive1	73.34	84.81	79.65	63.43	69.30	66.24	71.28
8	ITNLP-AiKF-primary	$71.52_{8}$	<b>82.67</b> <sub>9</sub>	$80.26_{8}$	<b>73.18</b> <sub>5</sub>	$19.71_{12}$	$31.06_{12}$	<b>64.43</b> <sub>9</sub>
	ECNU-contrastive1	71.34	83.39	78.62	66.95	41.31	51.09	67.86
9	ICRC-HIT-primary	$70.90_9$	<b>83.36</b> <sub>8</sub>	<b>77.38</b> <sub>10</sub>	<b>62.48</b> <sub>7</sub>	<b>62.53</b> <sub>5</sub>	$62.50_{7}$	<b>69.51</b> <sub>6</sub>
10	PMI-cool-primary	<b>68.79</b> <sub>10</sub>	<b>79.94</b> <sub>10</sub>	$80.00_9$	$47.81_{12}$	$70.58_2$	<b>57.00</b> <sub>9</sub>	$56.73_{12}$
	UH-PRHLT-contrastive1	67.57	79.50	77.08	54.10	50.11	52.03	62.45
11	<b>UH-PRHLT-primary</b>	<b>67.42</b> <sub>11</sub>	<b>79.38</b> <sub>11</sub>	<b>76.97</b> <sub>11</sub>	<b>55.64</b> <sub>10</sub>	$46.80_{11}$	$50.84_{11}$	$63.21_{10}$
	UH-PRHLT-contrastive2	67.33	79.34	76.73	54.97	49.13	51.89	62.97
12	<b>QAIIIT-primary</b>	<b>62.24</b> <sub>12</sub>	$75.41_{12}$	$70.58_{12}$	<b>50.28</b> <sub>11</sub>	<b>53.50</b> <sub>9</sub>	<b>51.84</b> <sub>10</sub>	$59.60_{11}$
	QAIIIT-contrastive2	61.93	75.22	69.95	49.48	49.96	49.72	58.93
	QAIIIT-contrastive1	61.80	75.12	69.76	49.85	50.94	50.39	59.24
	Baseline 1 (IR)	59.53	72.60	67.83	_	_	_	_
	Baseline 2 (random)	52.80	66.52	58.71	40.56	74.57	52.55	45.26
	Baseline 3 (all 'true')	_	_	_	40.64	100.00	57.80	40.64
	Baseline 4 (all 'false')		_	_	_	_	_	59.36

Table 1: **Subtask A, English (Question-Comment Similarity):** results for all submissions. The first column shows the rank of the primary runs with respect to the official MAP score. The second column contains the team's name and its submission type (primary vs. contrastive). The following columns show the results for the primary, and then for other, unofficial evaluation measures. The subindices show the rank of the primary runs with respect to the evaluation measure in the respective column.

	Submission	MAP	AvgRec	MRR	P	R	F1	Acc
	UH-PRHLT-contrastive2	77.33	90.84	83.93	63.57	70.39	66.80	76.71
1	<b>UH-PRHLT-primary</b>	$76.70_1$	<b>90.31</b> <sub>4</sub>	$83.02_4$	<b>63.53</b> <sub>7</sub>	<b>69.53</b> <sub>3</sub>	<b>66.39</b> <sub>3</sub>	$76.57_4$
	UH-PRHLT-contrastive1	76.56	90.22	83.02	62.74	70.82	66.53	76.29
	Kelp-contrastive1	76.28	91.33	82.71	63.83	77.25	69.90	77.86
	Kelp-contrastive2	76.27	91.44	84.10	64.06	77.25	70.04	78.00
	SLS-contrastive1	76.17	90.55	85.48	74.39	52.36	61.46	78.14
	SLS-contrastive2	76.09	90.14	84.21	77.21	45.06	56.91	77.29
2	ConvKN-primary	$76.02_2$	$90.70_{2}$	$84.64_1$	<b>68.58</b> <sub>3</sub>	<b>66.52</b> <sub>6</sub>	$67.54_2$	<b>78.71</b> <sub>3</sub>
3	Kelp-primary	<b>75.83</b> <sub>3</sub>	$91.02_1$	$82.71_{6}$	$66.79_4$	$75.97_2$	$71.08_1$	<b>79.43</b> <sub>1</sub>
	ConvKN-contrastive1	75.57	89.64	83.57	63.77	72.53	67.87	77.14
4	SLS-primary	<b>75.55</b> <sub>4</sub>	<b>90.65</b> <sub>3</sub>	$84.64_1$	$76.33_2$	<b>55.36</b> <sub>9</sub>	<b>64.18</b> <sub>6</sub>	<b>79.43</b> <sub>1</sub>
	SUper_team-contrastive1	75.17	88.84	83.66	63.25	63.52	63.38	75.57
5	ICL00-primary	<b>75.11</b> <sub>5</sub>	<b>89.33</b> <sub>5</sub>	$83.02_{4}$	<b>33.29</b> <sub>11</sub>	$100.00_1$	<b>49.95</b> <sub>9</sub>	$33.29_{11}$
	ICL00-contrastive1	74.89	89.08	82.71	33.29	100.00	49.95	33.29
6	SUper_team-primary	<b>74.82</b> <sub>6</sub>	<b>88.54</b> <sub>7</sub>	<b>83.66</b> <sub>3</sub>	<b>63.64</b> <sub>6</sub>	$57.08_{8}$	<b>60.18</b> <sub>7</sub>	<b>74.86</b> <sub>7</sub>
	ICL00-contrastive2	74.05	89.11	82.79	33.29	100.00	49.95	33.29
7	ECNU-primary	<b>73.92</b> <sub>7</sub>	<b>89.07</b> <sub>6</sub>	$81.48_{7}$	$\boldsymbol{100.00}_1$	$18.03_{11}$	$30.55_{11}$	$72.71_9$
	ECNU-contrastive1	73.25	88.55	80.81	100.00	18.03	30.55	72.71
	ECNU-contrastive2	71.62	86.55	80.88	54.61	71.24	61.82	70.71
8	ITNLP-AiKF-primary	<b>71.43</b> <sub>8</sub>	$87.31_{8}$	$\pmb{81.28}_8$	<b>62.75</b> <sub>9</sub>	$\boldsymbol{68.67}_{4}$	$65.57_4$	<b>76.00</b> <sub>6</sub>
9	<b>UniMelb-primary</b>	$70.20_9$	<b>86.21</b> <sub>9</sub>	$78.58_{11}$	<b>63.96</b> <sub>5</sub>	<b>54.08</b> <sub>10</sub>	$58.60_{8}$	<b>74.57</b> <sub>8</sub>
10	overfitting-primary	<b>69.68</b> <sub>10</sub>	$85.10_{10}$	$80.18_{9}$	$63.20_{8}$	<b>67.81</b> <sub>5</sub>	$65.42_{5}$	$76.14_5$
	QAIIIT-contrastive1	69.24	85.24	80.30	38.99	66.09	49.04	54.29
11	<b>QAIIIT-primary</b>	<b>69.04</b> <sub>11</sub>	<b>84.53</b> <sub>11</sub>	<b>79.55</b> <sub>10</sub>	<b>39.53</b> <sub>10</sub>	<b>64.81</b> <sub>7</sub>	<b>49.11</b> <sub>10</sub>	<b>55.29</b> <sub>10</sub>
	QAIIIT-contrastive2	46.23	68.07	48.92	36.25	51.50	42.55	53.71
	Baseline 1 (IR)	74.75	88.30	83.79	_	_	_	
	Baseline 2 (random)	46.98	67.92	50.96	32.58	73.82	45.20	40.43
	Baseline 3 (all 'true')	_	_	_	33.29	100.00	49.95	33.29
	Baseline 4 (all 'false')							66.71

Table 2: **Subtask B, English (Question-Question Similarity):** results for all submissions. The first column shows the rank of the primary runs with respect to the official MAP score. The second column contains the team's name and its submission type (primary vs. contrastive). The following columns show the results for the primary, and then for other, unofficial evaluation measures. The subindices show the rank of the primary runs with respect to the evaluation measure in the respective column.

	Submission	MAP	AvgRec	MRR	P	R	F1	Acc
	Kelp-contrastive2	55.58	63.36	61.19	32.21	70.18	44.16	83.41
1	SUper_team-primary	<b>55.41</b> <sub>1</sub>	<b>60.66</b> <sub>1</sub>	$61.48_1$	<b>18.03</b> <sub>7</sub>	$63.15_4$	$28.05_{4}$	<b>69.73</b> <sub>8</sub>
	SUper_team-contrastive2	53.48	59.40	59.09	18.42	66.97	28.89	69.20
2	Kelp-primary	$52.95_2$	$59.27_2$	$59.23_2$	<b>33.63</b> <sub>5</sub>	<b>64.53</b> <sub>3</sub>	$44.21_1$	$84.79_5$
	Kelp-contrastive1	52.95	59.34	58.06	34.08	65.29	44.78	84.96
3	SemanticZ-primary	<b>51.68</b> <sub>3</sub>	<b>53.43</b> <sub>6</sub>	$55.96_4$	<b>17.11</b> <sub>8</sub>	<b>57.65</b> <sub>5</sub>	<b>26.38</b> <sub>5</sub>	<b>69.94</b> <sub>7</sub>
	SemanticZ-contrastive1	51.46	52.69	55.75	16.94	57.49	26.17	69.69
	MTE-NN-contrastive2	49.49	55.78	51.80	15.68	73.09	25.82	60.76
4	MTE-NN-primary	<b>49.38</b> <sub>4</sub>	<b>55.44</b> <sub>4</sub>	<b>51.56</b> <sub>7</sub>	<b>15.26</b> <sub>9</sub>	$76.15_2$	<b>25.43</b> <sub>6</sub>	<b>58.27</b> <sub>9</sub>
5	ICL00-primary	<b>49.19</b> <sub>5</sub>	<b>51.07</b> <sub>7</sub>	<b>53.89</b> <sub>6</sub>	<b>9.34</b> <sub>10</sub>	$\boldsymbol{100.00}_1$	$17.09_{8}$	<b>9.34</b> <sub>10</sub>
6	<b>SLS-primary</b>	<b>49.09</b> <sub>6</sub>	<b>56.04</b> <sub>3</sub>	<b>55.98</b> <sub>3</sub>	$47.85_2$	<b>13.61</b> <sub>8</sub>	<b>21.19</b> <sub>7</sub>	$90.54_2$
	SemanticZ-contrastive2	48.76	50.72	53.85	16.92	57.34	26.13	69.71
	MTE-NN-contrastive1	48.52	54.71	50.51	15.13	76.61	25.27	57.67
7	ITNLP-AiKF-primary	<b>48.49</b> <sub>7</sub>	<b>55.16</b> <sub>5</sub>	<b>55.21</b> <sub>5</sub>	$30.05_{6}$	<b>50.92</b> <sub>6</sub>	$37.80_2$	<b>84.34</b> <sub>6</sub>
	ECNU-contrastive1	48.49	53.17	53.47	68.75	8.41	14.99	91.09
	SUper_team-contrastive1	48.23	54.93	54.85	22.81	36.70	28.14	82.49
	ECNU-contrastive2	47.24	53.21	51.89	70.27	7.95	14.29	91.09
	ICL00-contrastive1	47.23	49.71	50.28	9.34	100.00	17.09	9.34
8	ConvKN-primary	<b>47.15</b> <sub>8</sub>	<b>47.46</b> <sub>10</sub>	<b>51.43</b> <sub>8</sub>	<b>45.97</b> <sub>3</sub>	<b>8.72</b> <sub>10</sub>	<b>14.65</b> <sub>10</sub>	$90.51_{3}$
	SLS-contrastive1	46.48	53.31	52.53	16.24	85.93	27.32	57.29
9	ECNU-primary	<b>46.47</b> <sub>9</sub>	$50.92_{8}$	<b>51.41</b> <sub>9</sub>	$66.29_1$	$9.02_{9}$	<b>15.88</b> <sub>9</sub>	$91.07_1$
	SLS-contrastive2	46.39	52.83	51.17	16.18	85.63	27.22	57.23
	UH-PRHLT-contrastive1	43.37	48.01	48.43	38.56	32.72	35.40	88.84
	UH-PRHLT-contrastive2	43.32	47.97	48.45	38.21	32.72	35.26	88.77
	ConvKN-contrastive1	43.31	44.19	48.89	30.00	3.21	5.80	90.26
10	<b>UH-PRHLT-primary</b>	<b>43.20</b> <sub>10</sub>	<b>47.96</b> <sub>9</sub>	<b>47.79</b> <sub>10</sub>	$37.65_4$	<b>34.25</b> <sub>7</sub>	<b>35.87</b> <sub>3</sub>	$88.56_{4}$
	ICL00-contrastive2	41.32	44.56	43.55	9.34	100.00	17.09	9.34
	ConvKN-contrastive2	41.12	38.89	44.17	33.55	32.11	32.81	87.71
	Baseline 1 (IR)	40.36	45.97	45.83	_	_	_	_
	Baseline 2 (random)	15.01	11.44	15.19	9.40	75.69	16.73	29.59
	Baseline 3 (all 'true')		_	_	9.34	100.00	17.09	9.34
	Baseline 4 (all 'false')	_			_			90.66

Table 3: **Subtask C, English (Question-External Comment Similarity):** results for all submissions. The first column shows the rank of the primary runs with respect to the official MAP score. The second column contains the team's name and its submission type (primary vs. contrastive). The following columns show the results for the primary, and then for other, unofficial evaluation measures. The subindices show the rank of the primary runs with respect to the evaluation measure in the respective column.

	Submission	MAP	AvgRec	MRR	P	R	F1	Acc
1	SLS-primary	<b>45.83</b> <sub>1</sub>	<b>51.01</b> <sub>1</sub>	<b>53.66</b> <sub>1</sub>	<b>34.45</b> <sub>1</sub>	<b>52.33</b> <sub>3</sub>	<b>41.55</b> <sub>1</sub>	<b>71.67</b> <sub>1</sub>
2	ConvKN-primary	$45.50_2$	$50.13_2$	$52.55_2$	$28.55_2$	$64.53_2$	$39.58_2$	$62.10_{3}$
	SLS-contrastive1	44.94	49.72	51.58	62.96	2.40	4.62	80.95
3	RDI_team-primary	<b>43.80</b> <sub>3</sub>	<b>47.45</b> <sub>3</sub>	<b>49.21</b> <sub>3</sub>	<b>19.24</b> <sub>5</sub>	$\boldsymbol{100.00}_1$	$32.27_4$	<b>19.24</b> <sub>5</sub>
	SLS-contrastive2	42.95	47.61	49.55	27.20	74.40	39.84	56.76
	RDI_team-contrastive1	42.18	47.03	47.93	19.24	100.00	32.27	19.24
	ConvKN-contrastive2	39.98	43.68	46.41	26.26	68.39	37.95	57.00
	QU-IR-contrastive2	39.07	42.72	44.14	24.90	44.08	31.82	63.66
	RDI_team-contrastive2	38.84	42.98	42.97	19.24	100.00	32.27	19.24
4	<b>QU-IR-primary</b>	<b>38.63</b> <sub>4</sub>	$44.10_4$	$46.27_4$	<b>25.50</b> <sub>3</sub>	<b>45.13</b> <sub>5</sub>	$32.59_3$	$64.07_2$
	ConvKN-contrastive1	38.33	42.09	43.75	20.38	96.95	33.68	26.58
	QU-IR-contrastive1	37.80	40.96	44.39	23.54	41.89	30.14	62.64
5	<b>UPC_USMBA-primary</b>	<b>29.09</b> <sub>5</sub>	$30.04_{5}$	<b>34.04</b> <sub>5</sub>	$20.14_4$	<b>51.69</b> <sub>4</sub>	$28.99_5$	$51.27_{4}$
	Baseline 1 (IR)	28.88	28.71	30.93	_	_		
	Baseline 2 (random)	29.79	31.00	33.71	19.53	20.66	20.08	68.35
	Baseline 3 (all 'true')		_	_	19.24	100.00	32.27	19.24
	Baseline 4 (all 'false')		_	_	_	_	_	80.76

Table 4: **Subtask D, Arabic** (**Reranking the correct answers for a new question**): results for all submissions. The first column shows the rank of the primary runs with respect to the official MAP score. The second column contains the team's name and its submission type (primary vs. contrastive). The following columns show the results for the primary, and then for other, unofficial evaluation measures. The subindices show the rank of the primary runs with respect to the evaluation measure in the respective column.

Team ID	Team Affiliation
ConvKN	Qatar Computing Research Institute, HBKU, Qatar; University of Trento, Italy
ECNU	East China Normal University, China
ICL00	Institute of Computational Lingustics, Peking University, China
ICRC-HIT	Intelligence Computing Research Center, Harbin Institute of Technology, China
ITNLP-AiKF	Intelligence Technology and Natural Language Processing Laboratory, Harbin Institute of Technology, China
Kelp	University of Roma, Tor Vergata, Italy; Qatar Computing Research Institute, HBKU, Qatar
MTE-NN	Qatar Computing Research Institute, HBKU, Qatar
overfitting	University of Waterloo, Canada
PMI-cool	Sofia University, Bulgaria
QAIIIT	IIIT Hyderabad, India
QU-IR	Qatar University, Qatar
RDI_team	RDI Egypt, Cairo University, Egypt
SemanticZ	Sofia University, Bulgaria
SLS	MIT Computer Science and Artificial Intelligence Lab, USA
SUper_team	Sofia University, Bulgaria; Qatar Computing Research Institute, HBKU, Qatar
UH-PRHLT	Pattern Recognition and Human Language Technologies Research Center,
	Universitat Politècnica de València; University of Houston
UniMelb	The University of Melbourne, Australia
UPC_USMBA	Universitat Politècnica de Catalunya, Spain; Sidi Mohamed Ben Abdellah University, Morocco

Table 5: The participating teams and their affiliations.