

On Dialogue Management through Flow Discovery in Client-Facing Systems

Figure 1 depicts the flow discovered from SynthStudyAI-23, and the corresponding clustering metrics are in Table 1, showing that, similar to the insights obtained for StudyAI-23, the system generates longer responses than the users, especially in cluster c_{s5} (Delivery Time) and c_{s4} (Product Availability).

Figure 2 shows the flow discovered in SynthStudyAI-24, and Table 2 presents the clustering metrics, showing that, as with SynthStudyAI-23, the system provides longer responses than the users.

	Cluster	$ U / C $	$ W / U $	Sent _c
User	c_{u0} : Customer Service	1428	4.18 ± 3.7	0.51 ± 0.3
	c_{u1} : Delivery Delay	773	9.48 ± 6.6	0.38 ± 0.2
	c_{u2} : Change Order	462	12.50 ± 8.4	0.30 ± 0.3
	c_{u3} : School Issues	1196	9.39 ± 9.4	0.29 ± 0.3
	c_{u4} : Payment and Refund	1159	10.96 ± 6.3	0.42 ± 0.3
	c_{u5} : Online Purchases	736	10.57 ± 8.5	0.35 ± 0.3
	c_{u6} : Customer Support	540	7.86 ± 5.5	0.37 ± 0.3
System	c_{s0} : Delivery Information	291	26.57 ± 7.9	0.21 ± 0.3
	c_{s1} : Help Available	2982	5.33 ± 1.4	0.51 ± 0.1
	c_{s2} : Order Information	1663	20.29 ± 6.4	0.47 ± 0.1
	c_{s3} : Thanks and Help	574	36.02 ± 23.9	0.49 ± 0.2
	c_{s4} : Product Availability	390	48.14 ± 26.3	0.50 ± 0.2
	c_{s5} : Delivery Time	1033	60.22 ± 23.4	0.53 ± 0.2
	c_{s6} : Have a Great Day	306	6.78 ± 3.3	0.58 ± 0.3
	c_{s7} : Contact via Webform	579	33.70 ± 29.7	0.52 ± 0.2
	c_{s8} : Access Account	799	33.01 ± 19.7	0.50 ± 0.1
	c_{s9} : Insufficient Information	323	12.59 ± 1.5	0.06 ± 0.2

Table 1: Clustering metrics for SynthStudyAI-23, customer (User) and system.

	Cluster	$ U / C $	$ W / U $	Sent _c
User	c_{u0} : Issues and Questions	7725	12.43 ± 14.7	0.27 ± 0.3
	c_{u1} : Understanding Confirmed	8391	2.03 ± 0.2	0.97 ± 0.1
	c_{u2} : Order Communication	7023	3.22 ± 1.9	0.48 ± 0.1
	c_{u3} : Order Status	5860	2.99 ± 0.8	0.49 ± 0.8
	c_{u4} : Repeat Other Topics	4504	2.06 ± 0.5	0.50 ± 0.0
	c_{u5} : Friendly Chat	5066	1.39 ± 0.8	0.81 ± 0.6
	c_{u6} : Delivery Estimate	4555	10.40 ± 7.8	0.42 ± 0.2
	c_{u7} : Phone Contacts	3814	3.13 ± 1.4	0.50 ± 0.0
	c_{u8} : Complaints	1459	8.97 ± 3.10	0.11 ± 0.2
System	c_{s0} : Customer Service	8922	33.58 ± 7.9	0.54 ± 0.1
	c_{s1} : Offering Help	10925	7.20 ± 1.9	0.99 ± 0.1
	c_{s2} : Order Information	10481	47.77 ± 35.8	0.47 ± 0.2
	c_{s3} : Information Request	9788	13.10 ± 4.3	0.49 ± 0.0
	c_{s4} : Help Request	5668	12.11 ± 4.9	0.67 ± 0.3
	c_{s5} : Privacy Statement	11195	56.67 ± 15.2	0.50 ± 0.0

Table 2: Clustering metrics for SynthStudyAI-24, customer (User) and system.

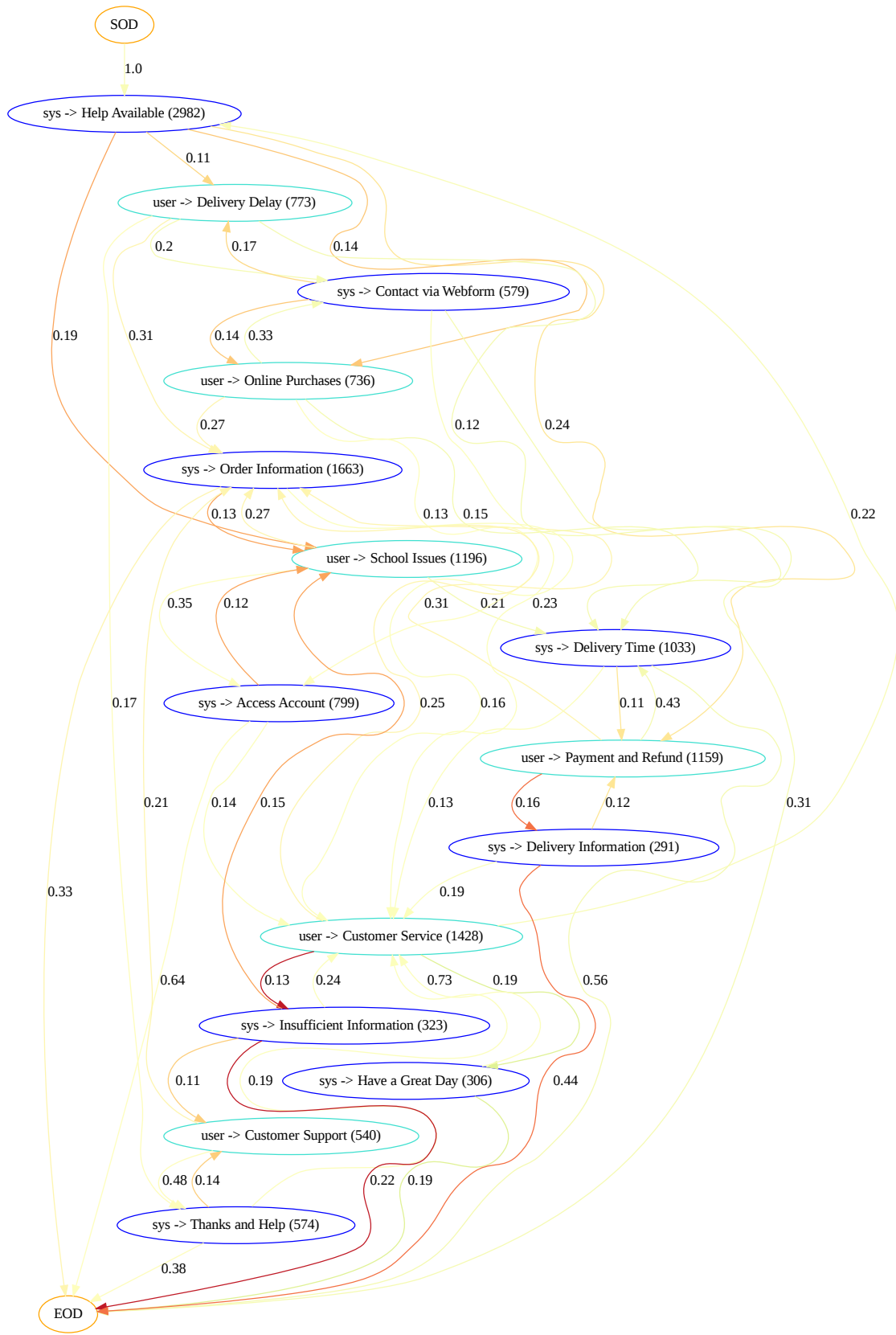


Figure 1: Dialogue flow discovered for SynthStudyAI-23.

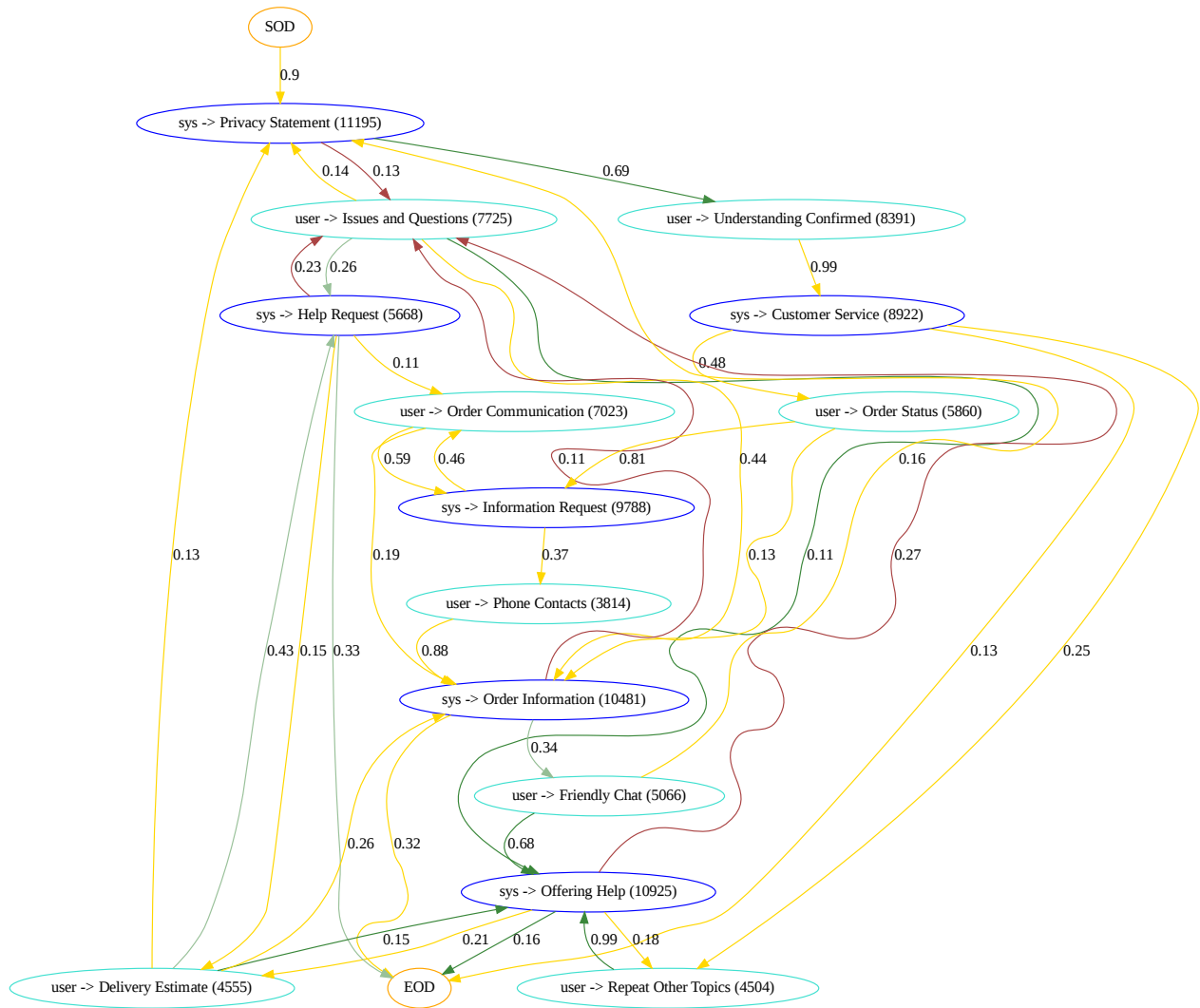


Figure 2: Dialogue flow discovered for SynthStudyAI-24.