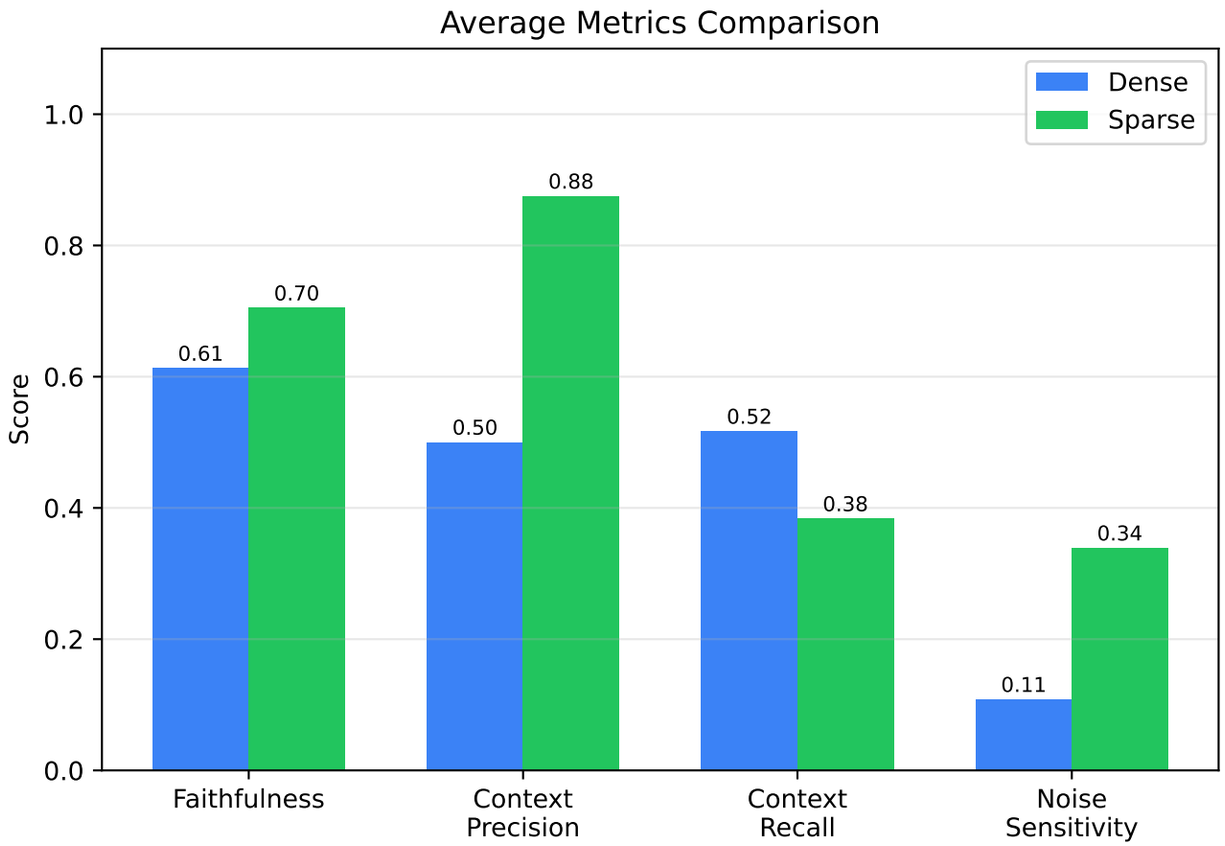
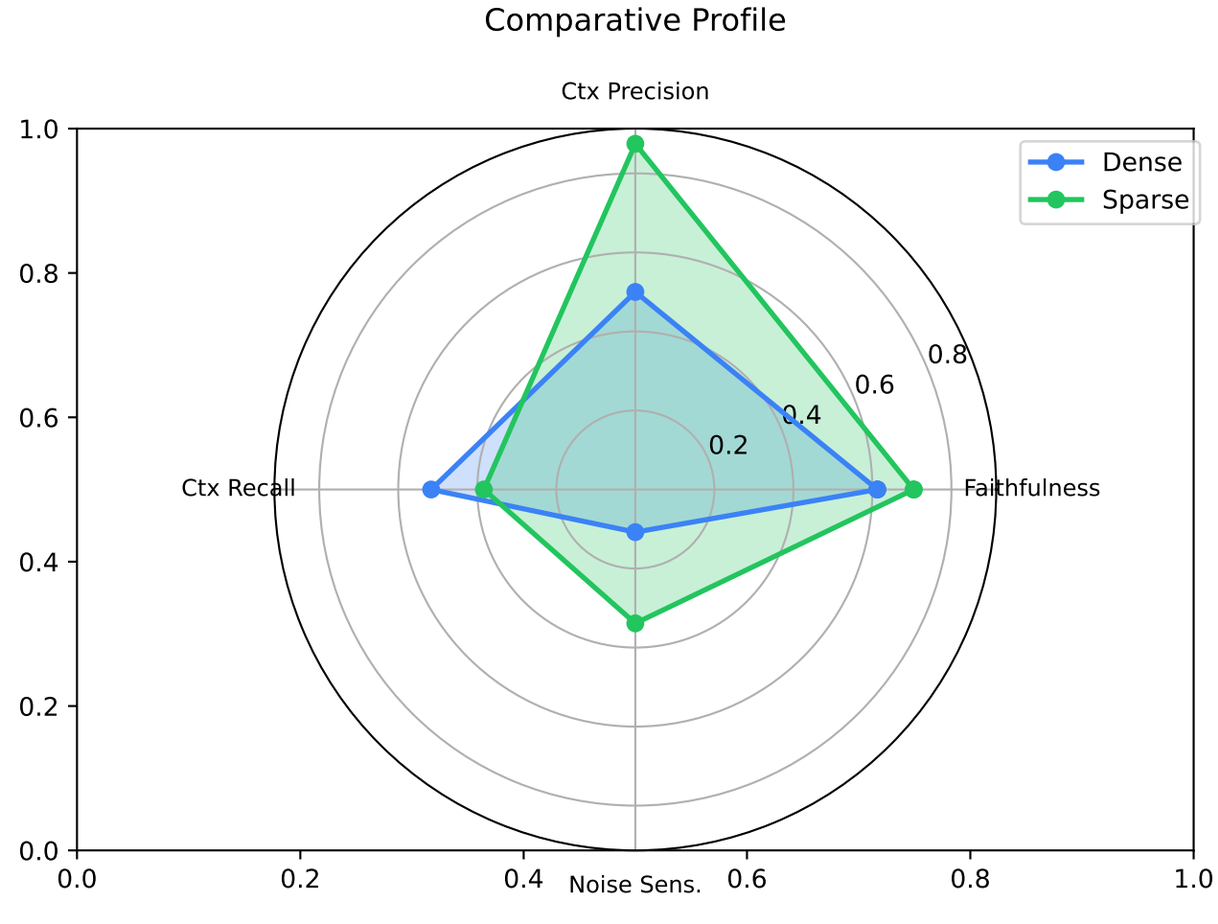
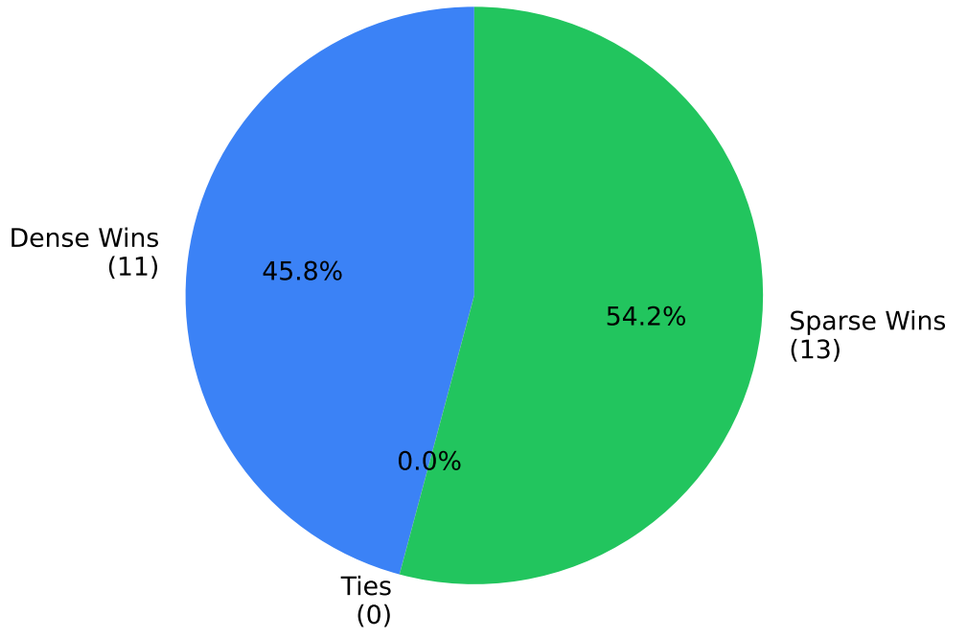
RAG Dense vs Sparse - Analysis Overview





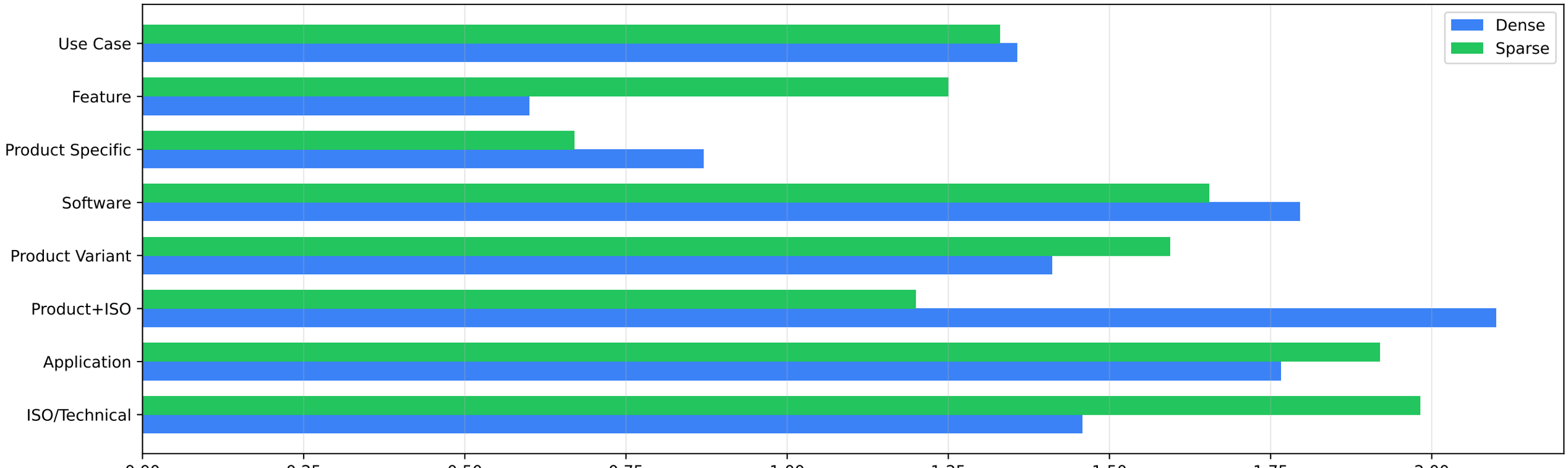


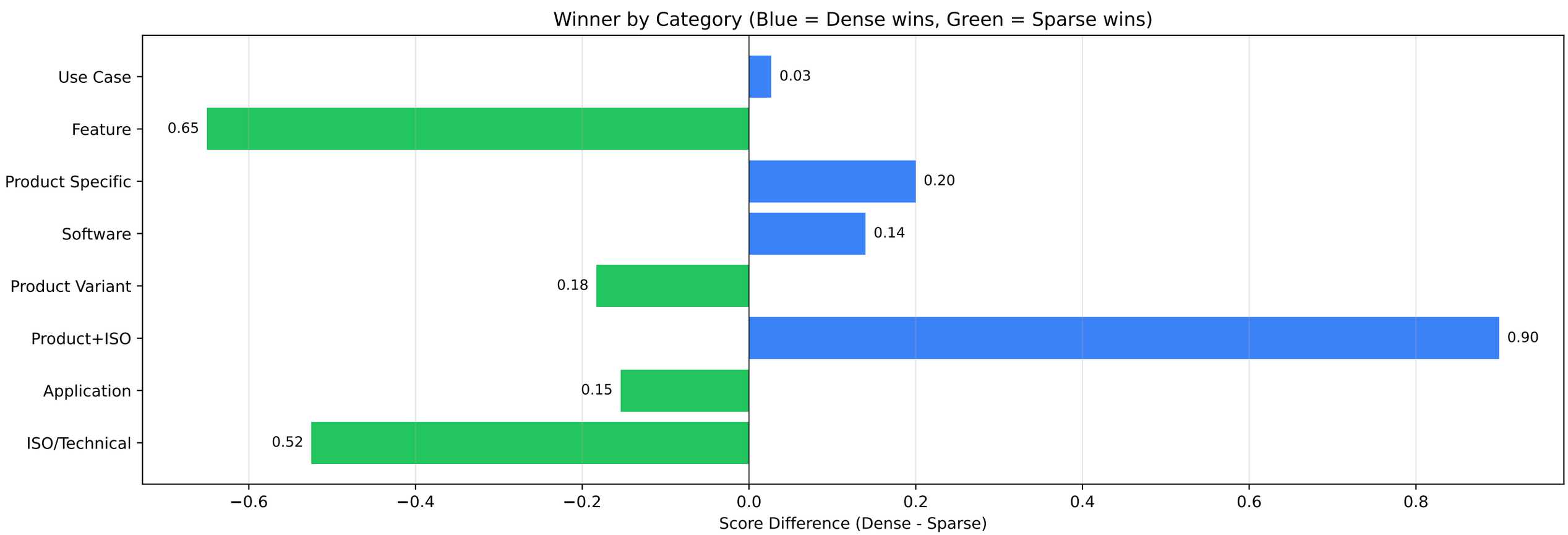
Descriptive Statistics

Metric	Dense μ	Dense σ	Sparse μ	Sparse σ	Δ (D-S)
Faithfulness	0.613	0.292	0.705	0.193	-0.092
Ctx Precision	0.500	0.500	0.875	0.331	-0.375
Ctx Recall	0.517	0.392	0.383	0.323	0.133
Noise Sens.	0.108	0.222	0.339	0.343	-0.231

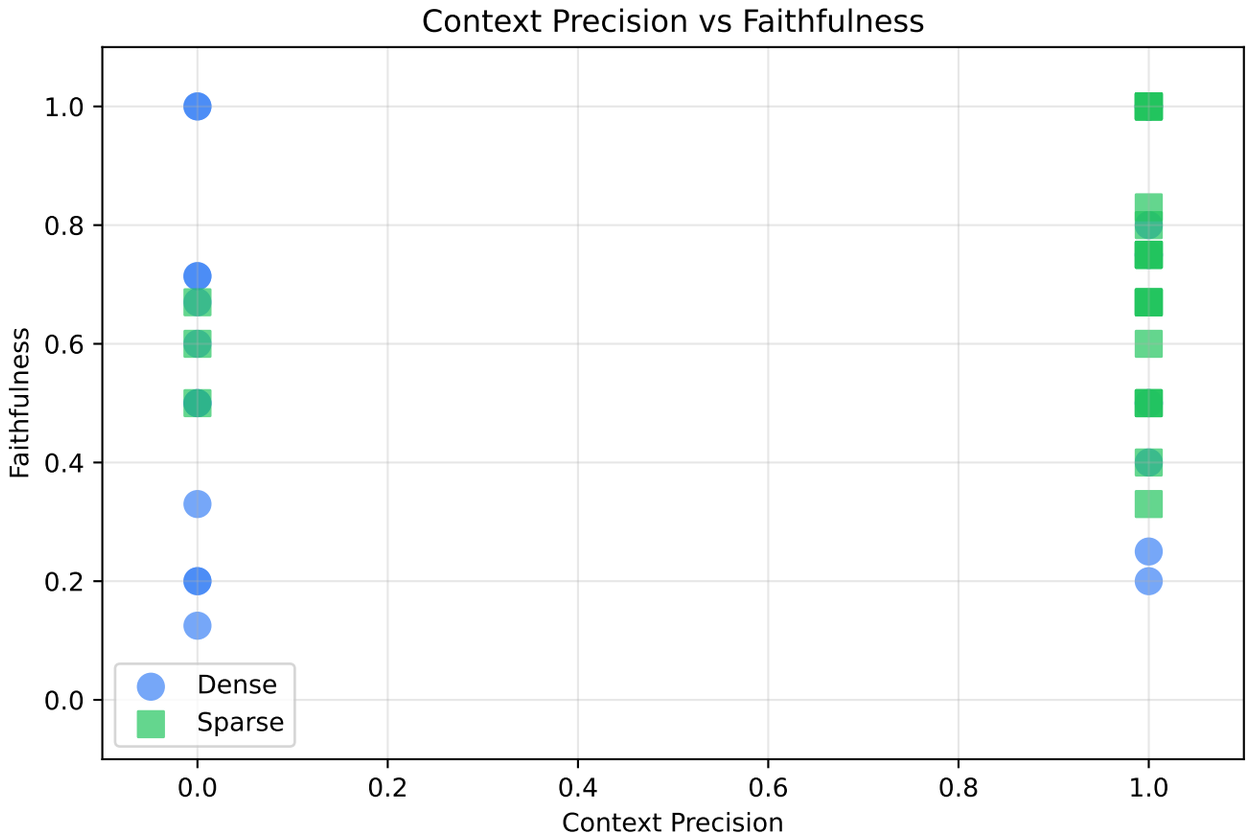
RAG Dense vs Sparse - Metric Breakdown by Question

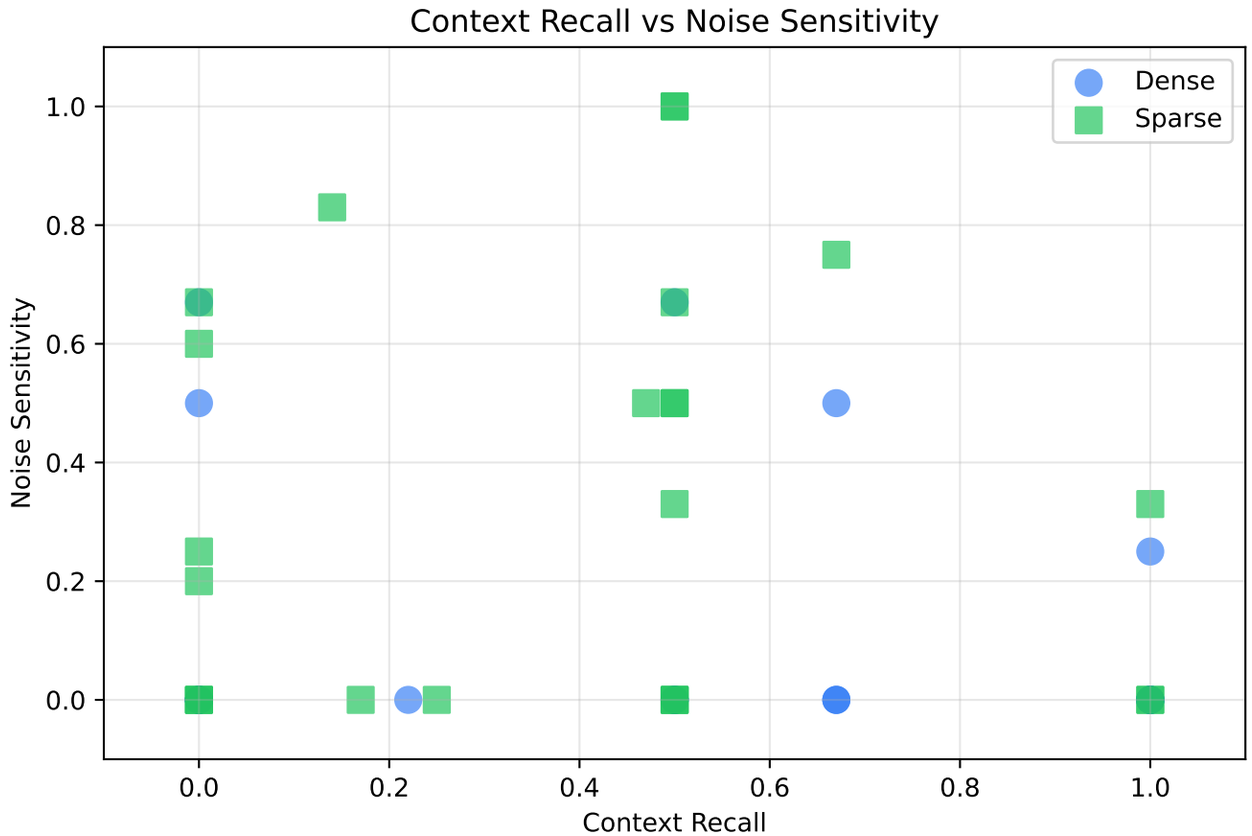
RAG Dense vs Sparse - Performance by Question Category

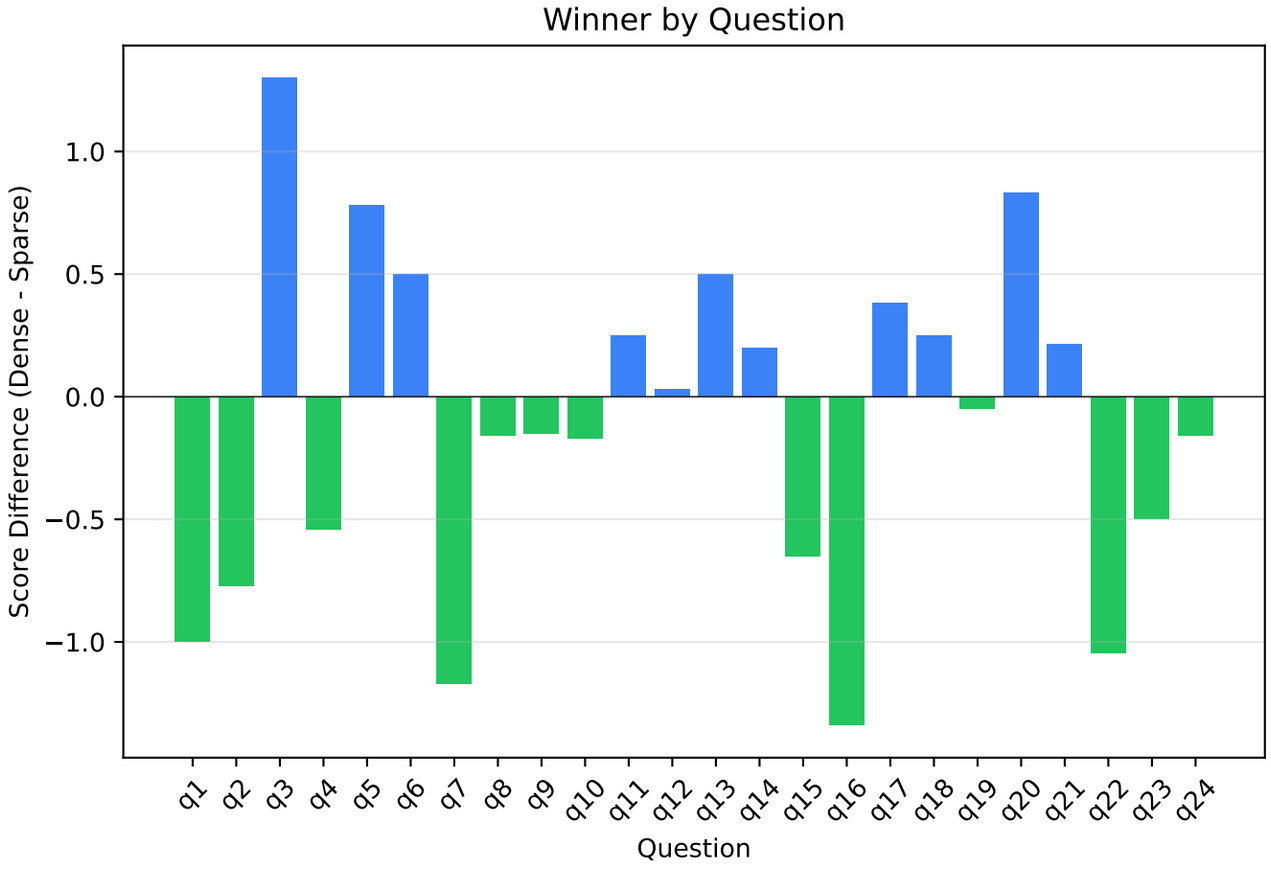


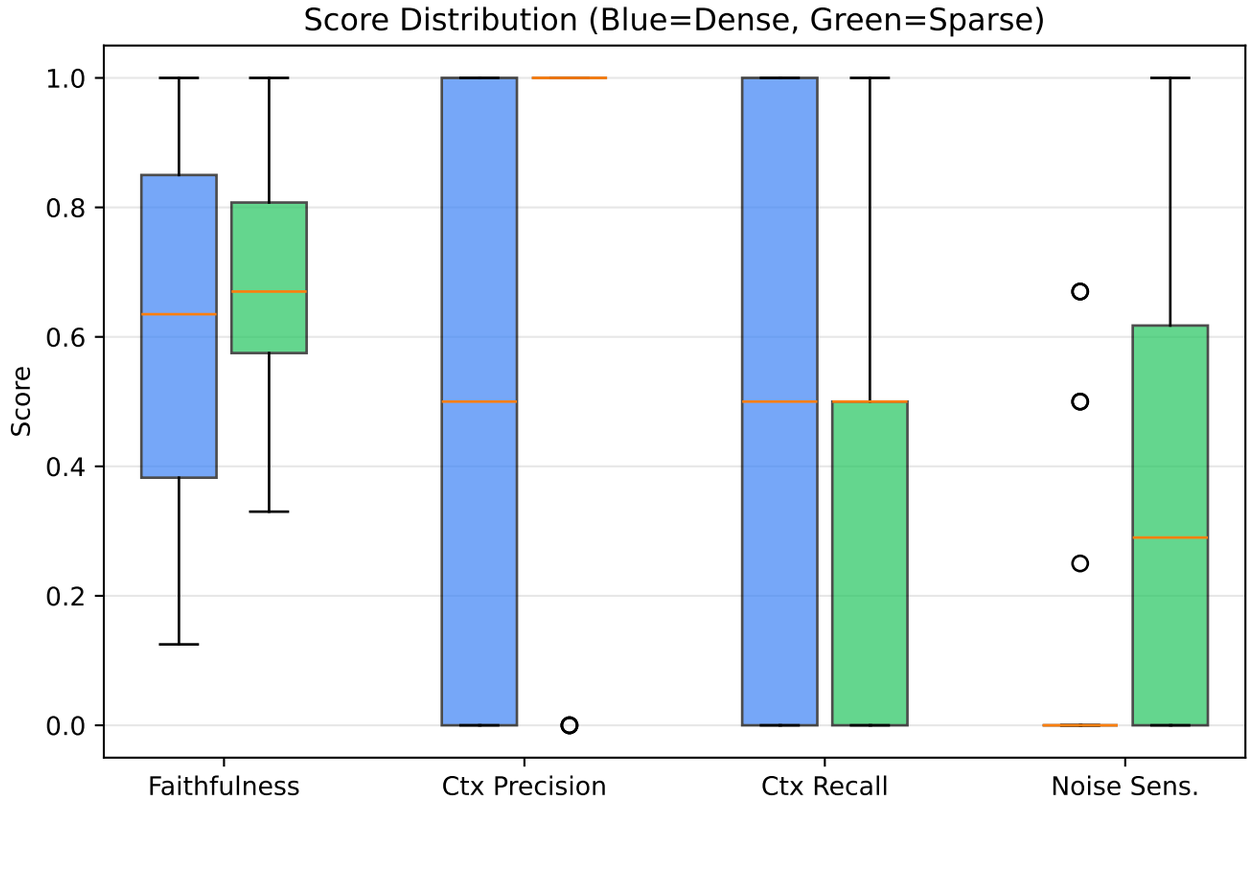


RAG Dense vs Sparse - Correlations & Insights









RAG Dense vs Sparse - Detailed Results Table

Q	Category	Faith D/S	Prec D/S	Rec D/S	Noise D/S	Total D/S	Win
q1	ISO/Technica	0.20/0.80	0/1	0.00/0.00	0.00/0.60	0.20/1.20	S
q2	Application	1.00/0.60	0/0	0.00/0.50	0.67/0.00	0.33/1.10	S
q3	Product+ISO	0.20/0.40	1/1	1.00/0.50	0.00/1.00	2.20/0.90	D
q4	ISO/Technica	0.80/0.67	1/1	0.00/1.00	0.00/0.33	1.80/2.34	S
q5	ISO/Technica	0.50/0.75	1/1	1.00/0.47	0.00/0.50	2.50/1.72	D
q6	Application	0.75/1.00	1/1	1.00/0.50	0.25/0.50	2.50/2.00	D
q7	Application	1.00/1.00	1/1	0.50/1.00	0.67/0.00	1.83/3.00	S
q8	Application	0.50/1.00	1/1	0.67/0.50	0.50/0.67	1.67/1.83	S
q9	Product Vari	0.75/0.60	1/1	0.00/0.00	0.50/0.20	1.25/1.40	S
q10	Product Vari	1.00/0.67	1/1	0.00/0.50	0.00/0.00	2.00/2.17	S
q11	Product Vari	0.50/0.67	0/0	0.67/0.25	0.00/0.00	1.17/0.92	D
q12	Software	0.67/1.00	0/1	0.67/0.14	0.00/0.83	1.34/1.31	D
q13	Product+ISO	1.00/0.50	1/1	0.00/0.00	0.00/0.00	2.00/1.50	D
q14	Product Spec	0.20/0.50	0/0	0.67/0.17	0.00/0.00	0.87/0.67	D
q15	Feature	0.60/0.75	0/1	0.00/0.50	0.00/1.00	0.60/1.25	S
q16	ISO/Technica	0.33/0.67	0/1	1.00/1.00	0.00/0.00	1.33/2.67	S
q17	Product Vari	0.71/0.33	0/1	1.00/0.00	0.00/0.00	1.71/1.33	D
q18	Software	0.25/1.00	1/1	1.00/0.50	0.00/0.50	2.25/2.00	D
q19	Product Vari	0.40/0.75	1/1	0.22/0.67	0.00/0.75	1.62/1.67	S
q20	Application	1.00/0.50	1/1	0.50/0.50	0.00/0.33	2.50/1.67	D
q21	Use Case	0.71/0.75	0/1	1.00/0.00	0.00/0.25	1.71/1.50	D
q22	Product Vari	0.12/0.67	0/1	0.50/0.00	0.00/0.00	0.62/1.67	S
q23	Product Vari	1.00/0.50	0/1	0.50/0.50	0.00/0.00	1.50/2.00	S
q24	Use Case	0.50/0.83	0/1	0.50/0.00	0.00/0.67	1.00/1.16	S

RAG Dense vs Sparse - Question Details

Q	Question Text	Category
q1	ISO standards room acoustics/speech intelligibilit	ISO/Technical
q2	Façade sound insulation testing	Application
q3	Calibrated speech intelligibility with DIRAC	Product+ISO
q4	ISO 3382 room acoustics measurements	ISO/Technical
q5	ISO 9612 workplace noise exposure	ISO/Technical
q6	Environmental noise complaints investigation	Application
q7	Exhaust noise in vehicles	Application
q8	Toys and machinery noise emissions	Application
q9	HBK 2255 long-term environmental monitoring	Product Variant
q10	HBK 2255 workplace noise ISO 9612	Product Variant
q11	HBK 2255 sound insulation testing	Product Variant
q12	Software module isolating noise events	Software
q13	Loudspeaker airborne sound insulation	Product+ISO
q14	Amplifier for OmniPower concert halls	Product Specific
q15	Amplifier remote control mobile device	Feature
q16	ISO 3382 reverberation time office buildings	ISO/Technical
q17	B&K 2245 sound power measurements	Product Variant
q18	B&K 2245 ISO 3744 software	Software
q19	B&K 2245 environmental noise surveys	Product Variant
q20	Roadside exhaust noise enforcement	Application
q21	Quick spot checks urban environments	Use Case
q22	HBK 2255 basic environmental monitoring	Product Variant
q23	HBK 2255 environmental + calibrator	Product Variant
q24	Community noise monitoring mobile app	Use Case