

Supplementary Materials

Navigating the Prompt Space: Improving LLM Classification of Social Science Texts Through Prompt Engineering

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Appendix A: Prompt Examples

Congressional Bills - Issue Topic Classification Prompt

Label Descriptions

Here is a list of policy issue topic labels (keys) and specific topics that belong to that label category (values):

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{'Macroeconomics': "Includes issues related to general domestic macroeconomic policy and more specific issues including inflation, cost of living, prices, interest rates, unemployment rate, impact of unemployment, training and retraining, unemployment benefits, monetary policy, central bank, treasury, public debt, budgeting, efforts to reduce deficits, tax policy, the impact of taxes, and tax enforcement, manufacturing policy, industrial revitalization and growth, wage or price control, emergency price controls.",
'Civil Rights': "Includes issues related to civil rights and minority rights. More specifically, it includes issues related to minority, ethnic, and racial group discrimination, sex, gender, and sexual discrimination, age discrimination, mandatory retirement age policies, handicap and disease discrimination, voting rights, expanding or contracting the franchise, participation and related issues, freedom of speech, religious freedoms, other types of freedom of expression, privacy rights, privacy of records, access to government information, abortion rights and anti-government activity groups.",
'Health': "Includes issues related generally to health care, including appropriations for general health care government agencies. More specifically, it includes issues related to broad, comprehensive changes in the health care system, health insurance reform, regulation, availability, and cost of insurance, the regulation and promotion of pharmaceuticals, medical devices, and clinical labs, facilities construction, regulation and payments, provider and insurer payments and regulation, medical liability, malpractice issues, medical fraud and abuse, and unfair practices, the supply and quantity of labor in the health care industry, training and licensing, disease prevention and treatment, health promotion, coverage and quality of infants and children care, school health programs, mental health care, and mental health disease, long term care,
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home health care, the terminally ill and rehabilitation services, prescription drug coverage, programs to pay for prescription drugs, policy to reduce the cost of prescription drugs, tobacco abuse, treatment, education and health effects, alcohol and illegal drug abuse, treatment, education and health effects, health care research and development.",

'Agriculture': "agriculture policy, the regulation and impact of agricultural foreign trade, government subsidies to farmers and ranchers, food inspection and safety, the regulation of agricultural marketing and providing information to consumers regarding a healthy diet, animal and crop disease, pest control and pesticide regulation, and welfare for domesticated animals, fishing, commercial fishery regulation and conservation, agricultural research and development.",

'Labor': "employment, and pensions, worker safety and protection and compensation for work-related injury and disease, job training for adult workers, workforce development, and efforts to retrain displaced workers, employee benefits, pensions, and retirement accounts, including government-provided unemployment insurance, labor unions, collective bargaining, employer-employee relations, fair labor standards, minimum wage and overtime compensation, labor law, youth employment, child labor and job training for youths, migrant, guest and seasonal workers.",

'Education': "education policy, higher education, student loans and education finance, the regulation of colleges and universities, elementary and private schools, school reform, safety in schools, efforts to generally improve educations standards and outcomes, education of underprivileged students, adult literacy programs, bilingual education needs, rural education initiatives, vocational education for children and adults, special education for the physically or mentally handicapped, education excellence, research and development in education.",

'Environment': "environmental policy, domestic drinking water safety, supply, pollution and additives, disposal and treatment of wastewater, solid water and runoff, hazardous waste and toxic chemical regulation, treatment and disposal, air pollution, climate change, noise pollution, recycling, reuse, resource conservation, environmental hazards, indoor air contaminations, indoor hazardous substances, forest protection, endangered species, control of the domestic illicit trade in wildlife products, regulation of laboratory or performance animals, land and water resource conservations, research and development in environmental technology, not including alternative energy",

'Energy': "energy policy, nuclear energy, safety and security, and disposal of nuclear waste, general electricity, hydropower, regulation of electric utilities, natural gas and oil, drilling, oil spills and flaring, oil and gas prices, shortages and gasoline regulation, coal production, use, trade, and regulation, alternative and renewable energy, biofuels, hydrogen and geothermal power, energy conservation and energy efficiency, energy research and development.",

'Immigration': "immigration, refugees, and citizenship.",

'Transportation': "transportation policy, mass transportation construction, regulation, safety and availability, highway construction, maintenance and safety, air travel, regulation and safety of aviation, airports, air traffic control, pilot training, aviation technology, railroads, rail travel, rail freight, development and deployment of new rail technologies, maritime transportation, inland waterways and channels, infrastructure and public works, transportation research and development.",

'Law and Crime': "general law, crime and family issues, law enforcement agencies, white collar crime, organized crime, counterfeiting and fraud,

cyber-crime, money laundering, illegal drug crime, criminal penalties for drug crimes, court administration, judiciary appropriations, guidelines for bail, pre-release, fines and legal representation, prisons and jails, parole systems, juvenile crime and justice, juvenile prisons and jails, efforts to reduce juvenile crime and recidivism, domestic violence, child welfare, family law, domestic criminal and civil codes, control, prevention and impact of crime, police and other general domestic security responses to terrorism.",

'Social Welfare': "social welfare policy, poverty assistance, food assistance programs, programs to assess or alleviate welfare dependency and tax credits directed at low-income families, elderly issues and elderly assistance, government pensions, aid for people with physical or mental disabilities, domestic volunteer associations, charities and youth organizations, parental leave and childcare.",

'Housing': "housing and urban affairs, housing and community development, neighborhood development, national housing policy, urban development and general urban issues, rural housing, economic, infrastructure and other development in non-urban areas, housing for low-income individuals and families, housing for the elderly, housing for homeless, efforts to reduce homelessness, housing and community development research and development.",

'Domestic Commerce': "government agencies regulating domestic commerce, the regulation of national banking systems and other non-bank financial institutions, the regulation and facilitation of securities and commodities trading, regulation of investments and related industries and exchanges, consumer finance, mortgages, credit cards, access to credit records, consumer credit fraud, insurance regulation, fraud and abuse in the insurance industry, the financial health of insurance industry, insurance availability and cost, personal, commercial and municipal bankruptcies, corporate mergers, antitrust regulation, corporate accounting and governance, corporate management, small businesses, copyrights and patents, patent reform, intellectual property, domestic natural disaster relief, disaster or flood insurance, natural disaster preparedness, tourism regulation, promotion and impact, consumer fraud and safety in domestic commerce, regulation and promotion of sports, gambling and personal fitness, domestic commerce research and development.",

'Defense': "general defense policy, defense alliance and agreement, security assistance, UN peacekeeping activities, military intelligence, espionage and covert operations, military readiness, coordination of armed services air support and sealift capabilities, national stockpiles of strategic materials, nuclear weapons, nuclear proliferation, modernizations of nuclear equipment, military aid to other countries, control of arms sales, military manpower, military personnel and their dependents, military courts, general veterans' issues, military procurement, conversion of old equipment, weapons and systems evaluation, military installations, construction and land transfers, military reserves and reserve affairs, military nuclear and hazardous waste disposal and military environmental compliance, domestic civil defense, national security responses to terrorism, non-contractor civilian personnel, civilian employment in the defense industry, military base closings, military contractors, war-related military operations, prisoners of war and collateral damage to civilian populations, claims against the military, settlements for military dependents, compensation for civilians injured in military operations, defense research and development.",

'Technology': "space, science, technology and communications, the government use of space and space resource exploitation agreements, government space programs and space exploration, military use of space, regulation and promotion of

commercial use of space, commercial satellite technology, government efforts to encourage commercial space development, science and technology transfer, international science cooperation, telephones and telecommunication regulation, infrastructure for high speed internet, mobile phones, broadcast industry, published media, control of the electromagnetic spectrum, weather forecasting, oceanography, geological surveys, weather forecasting research and technology, computer industry, regulation of the internet, cyber security.",

'Foreign Trade': "negotiations, disputes and agreements, including tax treaties, export regulation, subsidies, promotion and control, international private business investment and corporate development, productivity of competitiveness of domestic businesses and balance of payment issues, tariffs and other barriers to imports, import regulation and impact of imports on domestic industries, exchange rate and related issues.",

'International Affairs': "general international affairs and foreign aid, foreign aid not directly targeting and increasing international development, international resources exploitations and resources agreements, law of the sea and international ocean conservation efforts, developing countries, international finance and economic development banks, sovereign debt and implications for international lending institutions, Western Europe and European Union, foreign country or region, assessment of political issues in other countries, relations between individual countries, human rights violations, human rights treaties and conventions, UN reports on human rights, crimes associated with genocide or crimes against humanity, international organizations, NGOs, the United Nations, International Red Cross, UNESCO, International Olympic Committee, International Criminal Court, international terrorism, hijacking, acts of piracy in other countries, efforts to fight international terrorism, international legal mechanisms to combat terrorism, diplomats, diplomacy, embassies, citizens abroad, foreign diplomats in the country, visas and passports.",

'Government Operations': government agencies, intergovernmental relations, local government issues, general government efficiencies, bureaucratic oversight, postal services, regulation of mail, post-civil service, government pensions, general civil service issues, nominations and appointments, currency, national mints, medals and commemorative coins, government procurement, government contractors, contractor and procurement fraud, procurement processes and systems, government property management, construction and regulation, tax administration, enforcement, auditing for both individuals and corporations, public scandal and impeachment, government branch relations, administrative issues, constitutional reforms, regulation of political campaigns, campaign finance, political advertising and voter registration, census and statistics collection by government, capital city, claims against the government, compensation for the victims of terrorist attacks, compensation policies without other substantive provisions, national holidays and their observation.",

'Public Lands': "general public lands, water management, and territorial issues, national parks, memorials, historic sites and recreation, the management and staffing of cultural sites, indigenous affairs, indigenous lands, assistance to indigenous people, natural resources, public lands, forest management, forest fires, livestock grazing, water resources, water resource development and civil works, flood control and research, territorial and dependency issues and devolution.",

'Culture': "general cultural policy issues

'Private Bill: A private bill provides benefits to specified individuals (including corporate bodies). Individuals sometimes request relief through

private legislation when administrative or legal remedies are exhausted. Many private bills deal with immigration-granting citizenship or permanent residency. Private bills may also be introduced for individuals who have claims against the government, veterans' benefits claims, claims for military decorations, or taxation problems. The title of a private bill usually begins with the phrase, "For the relief of. . . ." if a private bill is passed in identical form by both houses of Congress and is signed by the president, it becomes a private law."}

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Instructional Nudges

I will show you congressional bill titles. Please assign a label to each title. Give me only the title number and the label, and put one label per line. Use ': ' to separate numbers from labels. Don't use any label which is not listed among the candidate labels.

Here are some notes:

- The category defense also includes issues related to veterans affairs and welfare benefits to current military members,
- The category public lands encompasses issues including, but not limited to, Native Americans affairs, national parks and national forests and interstate highways,
- Abortion related issues belong to the category of civil rights,
- Banking and finance related issues are related to domestic commerce category,
- Issues related countries other than the United States are related to the category of international affairs,
- Technology category also includes issues related to science and space,
- Titles which contain keywords such as import, export, tariff and duty are related to the category of foreign trade,
- Issues related to American state governments and the federal government organizations and their employees, not including the members of the army, are related to government operations category,
- Culture category is very rare, less than one percent, in the congressional bill title data

Few-Shot Examples

Here are a few example titles that belong to the "macroeconomics" category:

- 1: 'To amend the Congressional Budget Act of 1974 to

extend and reduce the discretionary spending limits and to extend the pay-as-you-go requirements set forth in the Balanced Budget and Emergency Deficit Control Act of 1985.'

2: 'To amend the Balanced Budget and Emergency Deficit Control Act of 1985 to modify the discretionary spending limits to take into account savings resulting from the reduction in the number of Federal employees.'

Here are a few example titles that belong to the "civil rights" category:

1: 'A bill to direct the United States Sentencing Commission to make sentencing guidelines for Federal criminal cases that provide sentencing enhancements for hate crimes.'

2: 'A bill to provide for unbiased consideration of applicants to medical schools.'

3: 'To prohibit discrimination on account of sex in the payment of wages by employers engaged in commerce or in operation of industries affecting commerce, and to provide procedures for assisting employees in collecting wages lost by reason of any such discrimination'

Here are a few example titles that belong to the "health" category:

1: 'A bill to provide grants to the States to assist them in informing and educating children in schools with respect to the harmful effects of tobacco, alcohol, and other potentially deleterious consumables.'

2: 'To amend title XXVII of the Public Health Service Act and title I of the Employee Retirement Income Security Act of 1974 to require that group and individual health insurance coverage and group health plans provide comprehensive coverage for childhood immunization.'

Here are a few example titles that belong to the "agriculture" category:

1: 'To impose import limitations on certain meat and meat products'

2: 'To enable wheat producers, processors, and end-product manufacturers of wheat foods to work

together to
establish, finance, and administer a coordinated program
of research, education, and promotion to maintain
and expand markets for wheat and wheat products for use
as human foods within the United States'

Here are a few example title that belong to the "labor"
category:

1: 'To improve the safety conditions of persons working
in the coal mining industry of the United States'

2: 'A bill to improve the H-2A agricultural worker
program for use by dairy workers, sheepherders, and
goat herders, and for other purposes.'

Here are a few example titles that belong to the
"education" category:

1: 'A bill to amend the Internal Revenue Code of 1954 to
exclude from gross income the amount of certain
cancellations of indebtedness under student loan
programs.'

2: 'To establish a grant program for nebulizers in
elementary and secondary schools.'

Here are a few example titles that belong to the
"environment" category:

1: 'To provide for the elimination of the use of lead in
motor vehicle fuel and the installation of
adequate antipollution devices on motor vehicles, and
for other purposes'

2: 'To amend the Lacey Act Amendments of 1981 to clarify
provisions enacted by the Captive Wildlife Safety Act,
to further the conservation of certain wildlife species,
and for other purposes.'

Here are a few example titles that belong to the "energy"
category:

1: 'To enhance and improve the energy security of the
United States, expand economic development,
increase agricultural income, and improve environmental
quality by reauthorizing and improving
the renewable energy systems and energy efficiency
improvements program of the Department of Agriculture
through fiscal year 2012, and for other purposes.'

2: 'A bill to amend Public Law 95-209 to increase the
authorization for appropriations to the Nuclear

Regulatory Commission in accordance with Section 261 of the Atomic Energy Act of 1954, as amended, and Section 305 of the Energy Reorganization Act of 1974, as amended, and for other purposes.'

Here are a few example titles that belong to the "immigration" category:

1: 'A bill to authorize the admission into the United States, under a quota for Koreans, persons of the Korean race, to make them racially eligible for naturalization, and for other purposes'

2: 'A bill to improve agricultural job opportunities, benefits, and security for aliens in the United States and for other purposes.'

Here are a few example titles that belong to the "transportation" category:

1: 'A bill to amend the Act of July 26, 1956, to give the Muscatine Bridge Commission additional time to construct, maintain, and operate a bridge across the Mississippi River at or near the city of Muscatine, Iowa, and the town of Drury, Ill'

2: 'To amend title 49, United States Code, to provide relief to the airline industry, to reform the Federal Aviation Administration, and to make technical corrections, and for other purposes.'

Here are a few example titles that belong to the "law and crime" category:

1: 'To assist in reducing crime by requiring speedy trials in cases of persons charged with violations of Federal criminal laws, to strengthen controls over dangerous defendants released prior to trial, to provide means for effective supervision and control of such defendants, and for other purposes'

2: 'A bill to amend title 18, United States Code, to exempt qualified current and former law enforcement officers from State laws prohibiting the carrying of concealed handguns.'

Here are a few example titles that belong to the "social welfare" category:

1: 'To repeal those provisions of law which exclude from the Federal old-age and survivors insurance system service performed by an individual in the employment of his son, daughter, spouse, or parent'

2: 'To amend the Internal Revenue Code of 1986 to repeal the 1993 increase in taxes on Social Security benefits.'

Here are a few example titles that belong to the "housing" category:

1: 'To extend and liberalize the direct home loan program for veterans, to extend the guaranteed home loan program, to provide special assistance to paraplegic veterans under the direct home loan program, to stimulate the making of direct farm housing loans, '

2: 'To reform the regulation of certain housing-related Government-sponsored enterprises.'

Here are a few example titles that belong to the "domestic commerce" category:

1: 'To amend the Internal Revenue Code of 1954 to provide that the term purchase for purposes of section 334 (b) (2) is to include certain indirect purchases of stock through the purchase of the stock of another corporation'

2: 'To amend the Internal Revenue Code of 1986 to permanently modify the limitations on the deduction of interest by financial institutions which hold tax-exempt bonds, and for other purposes.'

Here are a few example titles that belong to the "defense" category:

1: 'A bill to establish requirements for notification of Congress before the closure of, or significant reduction in force at, any military installation is carried out.'

2: 'To deauthorize the Military Selective Service Act, including the registration requirement and the activities of civilian local boards, civilian appeal boards, and similar local agencies of the Selective Service System, except during a national emergency declared by the President, and for other purposes.'

- Here are a few titles that belong to the "technology" category:

1: 'To direct the National Aeronautics and Space

Administration to plan to return to the Moon and develop a sustained human presence on the Moon.'

2: 'A bill to amend the Internal Revenue Code of 1954 to provide incentives for research and development by providing an increased investment credit or the allowance of rapid amortization, and for other purposes.'

Here are a few example titles that belong to the "foreign trade" category:

1: 'To suspend temporarily the duty on Compound T3028.'

2: 'A bill to amend the Tariff Schedules of the United States to permit the importation of upholstery regulators, upholsterer's regulating needles, and upholsterer's pins free of duty.'

Here are a few example titles that belong to the "international affairs" category:

1: 'To amend the Mutual Security Act of 1951 to provide for the termination of assistance to any nation which does not make a full contribution to the development and maintenance of the defensive strength of the free world'

2: 'To clarify the application of section 304 of the Tariff Act of 1930 as it relates to articles from areas of the West Bank and Gaza that are not administered by Israel.'

Here are a few example titles that belong to the "government operations" category:

1: 'To retain coverage under the laws providing employee benefits, such as compensation for injury, retirement, life insurance, and health benefits for employees of the Government of the United States who transfer to Indian tribal organizations to perform services in connection with governmental or other activities which are or have been performed by Government employees in or for Indian communities, and for other purposes',

2: 'A bill to amend the Clinger-Cohen Act of 1996 to provide individual federal agencies and the executive branch as a whole with increased incentives to use the share-in-savings program under that Act, to ease the use

of such program,
and for other purposes.'

Here are a few example titles that belong to the "public
lands" category:

1: 'To provide for the establishment of the Clara Barton
House National Historic Site in the State of Maryland,
and for other purposes'

2: 'To provide for the transfer of certain real property
to the National Park Service for inclusion in the
Upper Delaware Scenic and Recreational River.'

Here are a few example bill titles that belong to the
"private bill" category:

1: 'A bill for the relief of Andrew D, Sumner.'

2: 'A bill for the relief of Felix Hernandez-Arana and
his wife, Felicia Ogaldez-De Hernandez.'

ANES (MIP) - Emotionality Classification Prompt

Below is a list of open-ended survey responses. Classify each of them into one of the following categories: neutral or emotional.

Label Descriptions

A statement is emotional if it contains a word or phrase which is emotionally loaded, such as "love", "feel threatened" etc. It is neutral if there is just a problem description or factual statement.

Instructional Nudges

Note: We manually labelled a similar sized random sample before, and we estimate that the share of "neutral" labels must be around 75 percent. So, you should aim to achieve a similar distribution in your predicted labels.

Few-Shot Examples

Here are some example responses for each category:

Neutral

- "race relations, economy, and wealth gap",
- "gas prices, they are going up!!"
- "Cuts to military members and their families and their benefits."

Emotional

- "Homeless people -- I know there are a lot of homelessness. Our water situation -- it's bad. Pollution -- is bad."
- "the constant lies. what is the truth!? why is the media wanting to create a war!"

- "They should give the government back to the people. This country was supposed to be by the people, for the people. They should follow the Constitution. They're all liars, cheats, crooks don't care what the people want or say. They take away from us what we have worked hard for and earned get rid of the IRS and that bank that runs everything the federal bank that has 13 branches and runs everything. Stop messing with people let them farm or do whatever they want like we used to do without interference. No."
- "Raping those poor women!"
- "The lack of love because if we had that everything else would disappear."
- "The most, well, the arms race I'm very concerned about it. The terrorism problem we're going to have to face it in our own back yard. In Texas they'll come straight up from Mexico or Nicaragua Immigration illegals coming and we must do something about it. no."

Appendix B: Summary Tables

Congressional Bills - Issue Topic Classification

Table B1: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o)

Label Desc.	Inst.	Nudges	Few-Shot	Batch Size	Accuracy	F1	Weighted F1
-		-	-	1	0.689	0.613	0.702
-		-	-	10	0.710	0.646	0.716
-		-	-	100	0.706	0.614	0.713
-		-	-	500	0.702	0.605	0.708
-		-	-	1000	0.705	0.607	0.711
-		-	+	1	0.697	0.608	0.705
-		-	+	10	0.712	0.620	0.717
-		-	+	100	0.705	0.617	0.712
-		-	+	500	0.707	0.615	0.713
-		-	+	1000	0.695	0.622	0.698
-		+	-	1	0.724	0.628	0.732
-		+	-	10	0.737	0.658	0.739
-		+	-	100	0.733	0.660	0.736
-		+	-	500	0.731	0.626	0.735
-		+	-	1000	0.726	0.648	0.729
+		-	-	1	0.754	0.662	0.753
+		-	-	10	0.767	0.673	0.770
+		-	-	100	0.753	0.656	0.758
+		-	-	500	0.729	0.637	0.737
+		-	-	1000	0.735	0.638	0.742
-		+	+	1	0.716	0.624	0.726
-		+	+	10	0.737	0.662	0.741
-		+	+	100	0.732	0.660	0.736
-		+	+	500	0.727	0.654	0.730
-		+	+	1000	0.717	0.640	0.718
+		-	+	1	0.746	0.652	0.746
+		-	+	10	0.754	0.661	0.757
+		-	+	100	0.739	0.649	0.744
+		-	+	500	0.732	0.666	0.737
+		-	+	1000	0.724	0.627	0.729
+		+	-	1	0.758	0.655	0.756
+		+	-	10	0.759	0.653	0.758
+		+	-	100	0.755	0.684	0.757
+		+	-	500	0.747	0.675	0.749
+		+	-	1000	0.747	0.673	0.750
+		+	+	1	0.762	0.661	0.761
+		+	+	10	0.766	0.665	0.767
+		+	+	100	0.756	0.690	0.758
+		+	+	500	0.746	0.677	0.748
+		+	+	1000	0.747	0.674	0.750

Congressional Bills - Issue Topic Classification

Table B2: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash)

Label Desc.	Inst.	Nudges	Few-Shot	Batch Size	Accuracy	F1	Weighted F1
-		-	-	1	0.711	0.618	0.711
-		-	-	10	0.709	0.621	0.713
-		-	-	100	0.726	0.665	0.731
-		-	-	500	0.726	0.665	0.733
-		-	-	1000	0.722	0.663	0.729
-		-	+	1	0.726	0.660	0.727
-		-	+	10	0.717	0.656	0.719
-		-	+	100	0.715	0.652	0.720
-		-	+	500	0.724	0.663	0.731
-		-	+	1000	0.719	0.654	0.725
-		+	-	1	0.748	0.671	0.747
-		+	-	10	0.740	0.669	0.742
-		+	-	100	0.737	0.665	0.739
-		+	-	500	0.737	0.666	0.742
-		+	-	1000	0.739	0.668	0.745
+		-	-	1	0.752	0.660	0.757
+		-	-	10	0.730	0.658	0.745
+		-	-	100	0.756	0.665	0.763
+		-	-	500	0.718	0.645	0.742
+		-	-	1000	0.636	0.605	0.693
-		+	+	1	0.752	0.676	0.750
-		+	+	10	0.748	0.677	0.749
-		+	+	100	0.744	0.674	0.747
-		+	+	500	0.733	0.663	0.738
-		+	+	1000	0.740	0.673	0.746
+		-	+	1	0.763	0.669	0.765
+		-	+	10	0.757	0.696	0.759
+		-	+	100	0.753	0.689	0.757
+		-	+	500	0.755	0.659	0.759
+		-	+	1000	0.752	0.684	0.756
+		+	-	1	0.776	0.677	0.777
+		+	-	10	0.767	0.672	0.772
+		+	-	100	0.774	0.709	0.780
+		+	-	500	0.767	0.666	0.772
+		+	-	1000	0.765	0.694	0.771
+		+	+	1	0.771	0.671	0.773
+		+	+	10	0.776	0.708	0.779
+		+	+	100	0.767	0.700	0.771
+		+	+	500	0.765	0.699	0.769
+		+	+	1000	0.764	0.691	0.768

ANES (MIP) - Emotionality Classification

Table B3: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash)

Label Desc.	Inst.	Nudges	Few-Shot	Batch Size	Accuracy	F1	Weighted F1
-		-	-	1	0.486	0.485	0.494
-		-	-	10	0.749	0.722	0.767
-		-	-	100	0.870	0.836	0.875
-		-	-	300	0.877	0.844	0.882
-		-	+	1	0.752	0.728	0.770
-		-	+	10	0.836	0.800	0.845
-		-	+	100	0.866	0.834	0.873
-		-	+	300	0.882	0.848	0.886
-		+	-	1	0.647	0.634	0.671
-		+	-	10	0.772	0.742	0.789
-		+	-	100	0.874	0.841	0.879
-		+	-	300	0.888	0.856	0.892
+		-	-	1	0.711	0.690	0.733
+		-	-	10	0.849	0.810	0.855
+		-	-	100	0.867	0.798	0.860
+		-	-	300	0.868	0.789	0.857
-		+	+	1	0.735	0.710	0.755
-		+	+	10	0.865	0.827	0.870
-		+	+	100	0.856	0.817	0.862
-		+	+	300	0.858	0.823	0.864
+		-	+	1	0.825	0.794	0.836
+		-	+	10	0.881	0.844	0.884
+		-	+	100	0.887	0.849	0.889
+		-	+	300	0.874	0.798	0.863
+		+	-	1	0.790	0.758	0.804
+		+	-	10	0.851	0.812	0.857
+		+	-	100	0.869	0.800	0.862
+		+	-	300	0.845	0.736	0.825
+		+	+	1	0.888	0.854	0.891
+		+	+	10	0.908	0.875	0.909
+		+	+	100	0.896	0.854	0.895
+		+	+	300	0.854	0.747	0.834

ANES (MIP) - Emotionality Classification

Table B4: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o)

Label Desc.	Inst.	Nudges	Few-Shot	Batch Size	Accuracy	F1	Weighted F1
-		-	-	1	0.724	0.700	0.745
-		-	-	10	0.768	0.743	0.785
-		-	-	100	0.803	0.773	0.817
-		-	-	300	0.813	0.780	0.825
-		-	+	1	0.893	0.856	0.894
-		-	+	10	0.859	0.821	0.865
-		-	+	100	0.865	0.824	0.869
-		-	+	300	0.874	0.833	0.877
-		+	-	1	0.794	0.764	0.809
-		+	-	10	0.848	0.809	0.854
-		+	-	100	0.850	0.814	0.857
-		+	-	300	0.877	0.841	0.881
+		-	-	1	0.881	0.847	0.885
+		-	-	10	0.831	0.796	0.840
+		-	-	100	0.784	0.759	0.800
+		-	-	300	0.780	0.754	0.796
-		+	+	1	0.885	0.826	0.879
-		+	+	10	0.854	0.793	0.852
-		+	+	100	0.874	0.810	0.868
-		+	+	300	0.874	0.816	0.871
+		-	+	1	0.873	0.833	0.876
+		-	+	10	0.828	0.790	0.837
+		-	+	100	0.844	0.806	0.851
+		-	+	300	0.864	0.824	0.868
+		+	-	1	0.873	0.835	0.877
+		+	-	10	0.859	0.817	0.863
+		+	-	100	0.852	0.801	0.854
+		+	-	300	0.850	0.811	0.856
+		+	+	1	0.886	0.833	0.883
+		+	+	10	0.863	0.816	0.865
+		+	+	100	0.853	0.795	0.853
+		+	+	300	0.877	0.833	0.878

Appendix C: Class Specific Tables

Congressional Bills - Issue Topic Classification (-,-,-)

Table C1: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (-,-,-)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.493	0.709	0.582	0.509	0.704	0.591	0.504	0.582	0.540	0.451	0.582	0.508	0.411	0.745	0.530
2	0.643	0.479	0.549	0.652	0.479	0.552	0.641	0.436	0.519	0.771	0.394	0.521	0.884	0.404	0.555
3	0.716	0.888	0.793	0.743	0.871	0.802	0.732	0.881	0.800	0.749	0.841	0.792	0.760	0.837	0.797
4	0.763	0.817	0.789	0.745	0.787	0.765	0.773	0.777	0.775	0.754	0.761	0.758	0.757	0.726	0.741
5	0.532	0.649	0.584	0.549	0.673	0.604	0.515	0.631	0.567	0.527	0.571	0.549	0.438	0.565	0.494
6	0.728	0.843	0.781	0.720	0.843	0.777	0.718	0.786	0.751	0.723	0.786	0.753	0.678	0.730	0.703
7	0.538	0.794	0.642	0.554	0.766	0.643	0.511	0.809	0.626	0.523	0.816	0.637	0.491	0.787	0.605
8	0.894	0.651	0.753	0.863	0.682	0.762	0.836	0.713	0.770	0.765	0.682	0.721	0.742	0.736	0.739
9	0.768	0.829	0.797	0.759	0.868	0.810	0.835	0.868	0.852	0.827	0.882	0.854	0.838	0.882	0.859
10	0.820	0.719	0.766	0.816	0.715	0.762	0.810	0.745	0.776	0.840	0.783	0.811	0.833	0.783	0.807
12	0.704	0.562	0.625	0.694	0.598	0.643	0.686	0.625	0.654	0.656	0.656	0.656	0.636	0.688	0.661
13	0.498	0.689	0.578	0.435	0.700	0.536	0.424	0.679	0.522	0.382	0.684	0.491	0.508	0.642	0.567
14	0.553	0.565	0.559	0.554	0.609	0.580	0.562	0.587	0.574	0.571	0.565	0.568	0.590	0.533	0.560
15	0.628	0.420	0.503	0.643	0.442	0.524	0.538	0.494	0.516	0.556	0.424	0.481	0.774	0.383	0.512
16	0.775	0.488	0.599	0.773	0.490	0.600	0.813	0.499	0.618	0.787	0.474	0.592	0.747	0.589	0.659
17	0.625	0.508	0.561	0.593	0.542	0.566	0.536	0.627	0.578	0.449	0.593	0.511	0.451	0.627	0.525
18	0.855	0.877	0.866	0.820	0.877	0.847	0.805	0.886	0.843	0.833	0.873	0.852	0.809	0.855	0.832
19	0.539	0.647	0.588	0.552	0.624	0.586	0.529	0.647	0.582	0.566	0.553	0.560	0.566	0.553	0.560
20	0.641	0.581	0.610	0.693	0.570	0.626	0.715	0.528	0.608	0.713	0.527	0.606	0.739	0.503	0.598
21	0.789	0.554	0.651	0.768	0.592	0.669	0.785	0.579	0.667	0.747	0.673	0.708	0.735	0.639	0.683
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.951	0.877	0.913	0.976	0.973	0.975	0.981	0.980	0.980	0.980	0.979	0.979	0.980	0.979	0.979

Congressional Bills - Issue Topic Classification (-,-,+)

Table C2: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (-,-,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.554	0.393	0.460	0.551	0.413	0.472	0.564	0.383	0.456	0.548	0.347	0.425	0.738	0.158	0.261
2	0.578	0.511	0.542	0.662	0.543	0.596	0.746	0.500	0.599	0.759	0.436	0.554	0.848	0.415	0.557
3	0.727	0.892	0.801	0.743	0.861	0.797	0.756	0.871	0.809	0.771	0.854	0.810	0.749	0.851	0.797
4	0.807	0.766	0.786	0.819	0.782	0.800	0.800	0.772	0.786	0.783	0.751	0.767	0.807	0.721	0.761
5	0.618	0.560	0.588	0.664	0.589	0.625	0.589	0.554	0.571	0.573	0.536	0.554	0.611	0.524	0.564
6	0.749	0.843	0.793	0.725	0.811	0.766	0.757	0.805	0.780	0.694	0.786	0.737	0.690	0.799	0.741
7	0.585	0.730	0.650	0.563	0.759	0.647	0.572	0.816	0.673	0.568	0.766	0.653	0.587	0.766	0.665
8	0.885	0.659	0.756	0.901	0.636	0.745	0.856	0.643	0.735	0.780	0.744	0.762	0.804	0.667	0.729
9	0.786	0.808	0.825	0.819	0.895	0.855	0.827	0.882	0.854	0.850	0.895	0.872	0.815	0.868	0.841
10	0.769	0.736	0.752	0.811	0.732	0.770	0.821	0.762	0.790	0.804	0.787	0.796	0.841	0.740	0.787
12	0.694	0.527	0.599	0.709	0.598	0.649	0.693	0.616	0.652	0.680	0.625	0.651	0.652	0.652	0.652
13	0.454	0.774	0.572	0.417	0.784	0.545	0.414	0.711	0.523	0.418	0.658	0.511	0.363	0.689	0.475
14	0.543	0.620	0.579	0.532	0.630	0.577	0.545	0.587	0.565	0.578	0.565	0.571	0.610	0.543	0.575
15	0.463	0.532	0.495	0.453	0.517	0.483	0.410	0.543	0.467	0.392	0.558	0.460	0.354	0.520	0.421
16	0.807	0.466	0.591	0.784	0.474	0.591	0.768	0.460	0.576	0.794	0.504	0.617	0.768	0.515	0.617
17	0.477	0.525	0.500	0.522	0.610	0.562	0.538	0.712	0.613	0.543	0.746	0.629	0.412	0.678	0.513
18	0.855	0.851	0.853	0.844	0.877	0.860	0.815	0.890	0.851	0.835	0.864	0.849	0.820	0.882	0.850
19	0.532	0.694	0.602	0.542	0.682	0.604	0.547	0.682	0.607	0.589	0.624	0.606	0.565	0.612	0.588
20	0.676	0.596	0.634	0.707	0.587	0.641	0.718	0.554	0.625	0.706	0.545	0.615	0.737	0.527	0.614
21	0.753	0.597	0.666	0.737	0.651	0.691	0.753	0.634	0.688	0.755	0.696	0.724	0.676	0.743	0.708
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.956	0.949	0.952	0.971	0.981	0.976	0.974	0.978	0.976	0.981	0.980	0.980	0.978	0.979	0.978

Congressional Bills - Issue Topic Classification (-,+,-)

Table C3: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (-,+,-)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.625	0.459	0.529	0.726	0.393	0.510	0.531	0.347	0.420	0.526	0.367	0.432	0.488	0.413	0.448
2	0.722	0.553	0.627	0.743	0.553	0.634	0.778	0.521	0.624	0.847	0.532	0.654	0.894	0.447	0.596
3	0.785	0.803	0.794	0.774	0.800	0.787	0.775	0.827	0.800	0.789	0.786	0.788	0.792	0.773	0.782
4	0.773	0.726	0.749	0.771	0.701	0.734	0.779	0.751	0.765	0.761	0.711	0.735	0.770	0.680	0.722
5	0.746	0.595	0.662	0.718	0.667	0.691	0.704	0.595	0.645	0.685	0.530	0.597	0.679	0.542	0.603
6	0.781	0.717	0.748	0.786	0.717	0.750	0.748	0.692	0.719	0.748	0.692	0.719	0.723	0.673	0.697
7	0.674	0.660	0.667	0.630	0.652	0.641	0.590	0.787	0.675	0.582	0.759	0.658	0.527	0.759	0.622
8	0.925	0.574	0.708	0.859	0.566	0.682	0.874	0.643	0.741	0.774	0.636	0.698	0.783	0.698	0.738
9	0.836	0.803	0.819	0.782	0.803	0.792	0.842	0.842	0.842	0.798	0.882	0.838	0.765	0.855	0.807
10	0.843	0.549	0.665	0.834	0.579	0.683	0.856	0.634	0.729	0.854	0.749	0.798	0.852	0.736	0.790
12	0.774	0.429	0.552	0.752	0.513	0.610	0.688	0.522	0.594	0.704	0.594	0.644	0.715	0.571	0.635
13	0.750	0.632	0.686	0.655	0.689	0.672	0.637	0.684	0.660	0.615	0.632	0.623	0.568	0.663	0.612
14	0.727	0.435	0.544	0.595	0.478	0.530	0.608	0.522	0.561	0.575	0.500	0.535	0.592	0.489	0.536
15	0.547	0.625	0.583	0.509	0.621	0.559	0.461	0.599	0.521	0.414	0.558	0.475	0.472	0.539	0.503
16	0.715	0.801	0.756	0.704	0.864	0.776	0.719	0.815	0.764	0.730	0.804	0.765	0.726	0.771	0.748
17	0.487	0.644	0.555	0.500	0.712	0.587	0.506	0.712	0.592	0.464	0.661	0.545	0.451	0.695	0.547
18	0.798	0.851	0.824	0.777	0.886	0.828	0.792	0.904	0.844	0.779	0.899	0.835	0.795	0.904	0.846
19	0.489	0.788	0.604	0.500	0.753	0.601	0.524	0.765	0.622	0.569	0.729	0.639	0.604	0.718	0.656
20	0.604	0.748	0.668	0.670	0.713	0.691	0.699	0.664	0.681	0.739	0.664	0.699	0.711	0.678	0.694
21	0.712	0.795	0.751	0.719	0.760	0.739	0.768	0.703	0.734	0.756	0.730	0.743	0.711	0.700	0.706
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.981	0.925	0.952	0.986	0.966	0.975	0.979	0.976	0.977	0.977	0.974	0.976	0.982	0.972	0.977

Congressional Bills - Issue Topic Classification (+,-,-)

Table C4: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (+,-,-)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			500		1000
1	0.567	0.648	0.605	0.539	0.663	0.595	0.437	0.704	0.539	0.436	0.592	0.426
2	0.833	0.638	0.723	0.762	0.649	0.701	0.758	0.500	0.603	0.745	0.436	0.829
3	0.789	0.864	0.825	0.782	0.841	0.810	0.762	0.858	0.807	0.767	0.814	0.767
4	0.773	0.863	0.815	0.815	0.848	0.831	0.799	0.807	0.803	0.780	0.792	0.803
5	0.692	0.655	0.673	0.752	0.649	0.696	0.690	0.595	0.639	0.695	0.530	0.662
6	0.771	0.698	0.733	0.767	0.704	0.734	0.769	0.711	0.739	0.747	0.704	0.719
7	0.776	0.638	0.700	0.783	0.667	0.720	0.667	0.780	0.719	0.573	0.752	0.550
8	0.848	0.736	0.788	0.853	0.721	0.782	0.830	0.721	0.772	0.772	0.760	0.746
9	0.781	0.750	0.765	0.807	0.882	0.843	0.807	0.882	0.843	0.885	0.908	0.798
10	0.870	0.715	0.785	0.870	0.770	0.817	0.864	0.783	0.821	0.866	0.800	0.832
12	0.783	0.482	0.597	0.777	0.513	0.618	0.721	0.554	0.626	0.683	0.558	0.698
13	0.643	0.663	0.653	0.555	0.747	0.637	0.543	0.663	0.597	0.610	0.658	0.620
14	0.628	0.587	0.607	0.615	0.609	0.612	0.609	0.576	0.592	0.563	0.533	0.588
15	0.667	0.662	0.664	0.675	0.632	0.653	0.639	0.565	0.600	0.498	0.509	0.752
16	0.770	0.621	0.688	0.758	0.676	0.715	0.767	0.717	0.741	0.710	0.608	0.740
17	0.694	0.847	0.763	0.689	0.864	0.767	0.632	0.814	0.711	0.640	0.814	0.590
18	0.859	0.855	0.857	0.847	0.873	0.860	0.840	0.873	0.856	0.843	0.873	0.817
19	0.619	0.612	0.615	0.639	0.624	0.631	0.667	0.612	0.638	0.686	0.565	0.654
20	0.715	0.702	0.708	0.750	0.706	0.727	0.749	0.660	0.702	0.737	0.651	0.737
21	0.716	0.787	0.750	0.743	0.800	0.770	0.790	0.725	0.756	0.747	0.723	0.755
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.856	0.989	0.918	0.950	0.981	0.965	0.974	0.981	0.978	0.982	0.979	0.981

Congressional Bills - Issue Topic Classification (-,+,+)

Table C5: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (-,+,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.619	0.306	0.410	0.613	0.372	0.463	0.595	0.255	0.357	0.700	0.179	0.285	0.738	0.158	0.261
2	0.681	0.660	0.670	0.690	0.617	0.652	0.797	0.585	0.675	0.797	0.500	0.614	0.875	0.447	0.592
3	0.774	0.814	0.793	0.777	0.803	0.790	0.781	0.810	0.795	0.806	0.790	0.798	0.795	0.790	0.793
4	0.819	0.756	0.786	0.832	0.756	0.793	0.814	0.777	0.795	0.798	0.741	0.768	0.801	0.695	0.745
5	0.719	0.518	0.602	0.723	0.560	0.631	0.719	0.518	0.602	0.674	0.554	0.608	0.672	0.524	0.589
6	0.758	0.711	0.734	0.745	0.717	0.731	0.756	0.742	0.749	0.737	0.704	0.720	0.714	0.723	0.719
7	0.592	0.730	0.654	0.609	0.752	0.673	0.583	0.773	0.665	0.606	0.730	0.662	0.585	0.709	0.641
8	0.875	0.597	0.710	0.844	0.628	0.720	0.833	0.620	0.711	0.819	0.667	0.735	0.787	0.659	0.717
9	0.782	0.803	0.792	0.829	0.829	0.829	0.844	0.855	0.850	0.883	0.895	0.889	0.870	0.882	0.876
10	0.832	0.651	0.730	0.845	0.672	0.749	0.848	0.736	0.788	0.854	0.770	0.810	0.827	0.753	0.788
12	0.711	0.473	0.568	0.720	0.527	0.608	0.693	0.554	0.615	0.683	0.558	0.614	0.684	0.571	0.623
13	0.603	0.695	0.645	0.566	0.742	0.642	0.552	0.732	0.629	0.610	0.658	0.633	0.466	0.679	0.552
14	0.675	0.609	0.640	0.600	0.587	0.593	0.609	0.576	0.592	0.603	0.511	0.553	0.590	0.533	0.560
15	0.466	0.632	0.536	0.470	0.610	0.531	0.408	0.632	0.496	0.345	0.625	0.444	0.389	0.558	0.458
16	0.724	0.807	0.763	0.744	0.826	0.783	0.742	0.793	0.767	0.733	0.785	0.758	0.730	0.782	0.755
17	0.486	0.593	0.534	0.475	0.644	0.547	0.506	0.712	0.592	0.495	0.780	0.605	0.484	0.763	0.592
18	0.868	0.838	0.853	0.845	0.864	0.855	0.827	0.899	0.861	0.827	0.882	0.854	0.800	0.877	0.837
19	0.482	0.800	0.602	0.485	0.753	0.590	0.512	0.729	0.602	0.608	0.694	0.648	0.567	0.694	0.624
20	0.664	0.684	0.674	0.706	0.654	0.679	0.722	0.616	0.665	0.735	0.625	0.676	0.712	0.609	0.656
21	0.754	0.666	0.707	0.764	0.713	0.738	0.787	0.703	0.742	0.729	0.752	0.741	0.693	0.750	0.721
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.971	0.918	0.944	0.975	0.976	0.976	0.981	0.978	0.979	0.982	0.979	0.980	0.981	0.978	0.979

Congressional Bills - Issue Topic Classification (+,-,+)

Table C6: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (+,-,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.571	0.449	0.503	0.549	0.429	0.481	0.486	0.429	0.455	0.487	0.474	0.481	0.439	0.821	0.572
2	0.670	0.649	0.659	0.726	0.649	0.685	0.742	0.521	0.613	0.782	0.457	0.577	0.848	0.415	0.557
3	0.757	0.878	0.813	0.789	0.861	0.823	0.781	0.871	0.824	0.773	0.844	0.807	0.745	0.824	0.783
4	0.811	0.827	0.819	0.836	0.827	0.832	0.821	0.792	0.806	0.804	0.772	0.788	0.825	0.741	0.781
5	0.713	0.679	0.695	0.754	0.637	0.690	0.712	0.589	0.645	0.691	0.571	0.625	0.650	0.542	0.591
6	0.777	0.811	0.794	0.767	0.786	0.776	0.753	0.767	0.760	0.728	0.774	0.750	0.707	0.742	0.724
7	0.727	0.716	0.721	0.708	0.688	0.698	0.673	0.787	0.725	0.587	0.695	0.636	0.598	0.695	0.643
8	0.856	0.736	0.792	0.858	0.705	0.774	0.855	0.729	0.787	0.802	0.752	0.776	0.742	0.736	0.739
9	0.810	0.842	0.826	0.802	0.855	0.828	0.846	0.868	0.857	0.872	0.895	0.883	0.817	0.882	0.848
10	0.850	0.723	0.782	0.854	0.774	0.812	0.861	0.766	0.811	0.851	0.779	0.813	0.843	0.779	0.810
12	0.754	0.478	0.585	0.755	0.549	0.636	0.701	0.545	0.613	0.691	0.549	0.612	0.674	0.536	0.597
13	0.490	0.747	0.592	0.481	0.795	0.599	0.495	0.753	0.597	0.516	0.674	0.584	0.442	0.684	0.537
14	0.594	0.620	0.606	0.590	0.641	0.615	0.587	0.587	0.587	0.581	0.543	0.562	0.578	0.565	0.571
15	0.548	0.680	0.607	0.531	0.691	0.601	0.474	0.639	0.544	0.408	0.554	0.470	0.771	0.450	0.568
16	0.794	0.567	0.661	0.763	0.597	0.670	0.763	0.569	0.652	0.770	0.629	0.693	0.768	0.531	0.628
17	0.578	0.814	0.676	0.627	0.881	0.732	0.658	0.847	0.741	0.615	0.814	0.701	0.556	0.847	0.671
18	0.878	0.855	0.867	0.865	0.873	0.869	0.863	0.882	0.872	0.850	0.868	0.859	0.853	0.864	0.858
19	0.573	0.694	0.628	0.604	0.682	0.641	0.640	0.647	0.643	0.639	0.624	0.631	0.575	0.588	0.581
20	0.713	0.653	0.681	0.753	0.669	0.709	0.715	0.634	0.672	0.733	0.647	0.687	0.724	0.638	0.678
21	0.744	0.743	0.743	0.744	0.748	0.746	0.764	0.738	0.751	0.720	0.738	0.729	0.690	0.733	0.711
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.932	0.982	0.956	0.970	0.980	0.975	0.974	0.980	0.977	0.980	0.980	0.980	0.981	0.972	0.976

Congressional Bills - Issue Topic Classification (+,+, -)

Table C7: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (+,+, -)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.664	0.444	0.532	0.664	0.413	0.509	0.446	0.418	0.432	0.449	0.566	0.501	0.434	0.750	0.550
2	0.836	0.649	0.731	0.789	0.638	0.706	0.831	0.574	0.679	0.781	0.532	0.633	0.885	0.489	0.630
3	0.825	0.814	0.819	0.814	0.800	0.807	0.810	0.810	0.810	0.800	0.814	0.807	0.810	0.780	0.794
4	0.861	0.756	0.805	0.833	0.736	0.782	0.828	0.756	0.790	0.805	0.711	0.755	0.815	0.695	0.751
5	0.816	0.554	0.660	0.821	0.601	0.694	0.790	0.560	0.655	0.693	0.524	0.597	0.714	0.536	0.612
6	0.841	0.698	0.763	0.812	0.654	0.725	0.768	0.667	0.714	0.772	0.704	0.737	0.778	0.704	0.739
7	0.780	0.603	0.680	0.809	0.631	0.709	0.727	0.716	0.721	0.595	0.709	0.647	0.563	0.695	0.622
8	0.854	0.636	0.729	0.862	0.628	0.726	0.853	0.674	0.753	0.795	0.721	0.756	0.736	0.736	0.736
9	0.831	0.776	0.803	0.829	0.829	0.829	0.846	0.868	0.857	0.870	0.882	0.876	0.788	0.882	0.832
10	0.888	0.574	0.698	0.876	0.630	0.733	0.880	0.715	0.789	0.880	0.779	0.826	0.900	0.766	0.828
12	0.833	0.424	0.562	0.828	0.451	0.584	0.757	0.513	0.612	0.709	0.522	0.602	0.698	0.496	0.580
13	0.717	0.653	0.683	0.680	0.695	0.688	0.654	0.658	0.656	0.681	0.653	0.667	0.623	0.653	0.638
14	0.854	0.446	0.586	0.719	0.446	0.550	0.662	0.489	0.562	0.590	0.500	0.541	0.625	0.489	0.549
15	0.522	0.740	0.612	0.518	0.699	0.595	0.491	0.673	0.567	0.509	0.554	0.530	0.782	0.494	0.606
16	0.722	0.850	0.781	0.719	0.872	0.788	0.736	0.837	0.783	0.722	0.820	0.768	0.716	0.809	0.760
17	0.632	0.814	0.711	0.560	0.864	0.680	0.610	0.847	0.709	0.605	0.831	0.700	0.576	0.831	0.681
18	0.791	0.912	0.847	0.766	0.904	0.829	0.782	0.912	0.842	0.791	0.895	0.840	0.778	0.908	0.838
19	0.581	0.718	0.642	0.561	0.706	0.625	0.606	0.706	0.652	0.620	0.671	0.644	0.632	0.647	0.640
20	0.646	0.782	0.707	0.670	0.771	0.717	0.708	0.728	0.718	0.729	0.693	0.710	0.707	0.700	0.703
21	0.683	0.849	0.757	0.705	0.842	0.767	0.739	0.772	0.755	0.723	0.738	0.730	0.729	0.765	0.746
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.947	0.981	0.964	0.976	0.975	0.976	0.980	0.979	0.979	0.979	0.979	0.979	0.980	0.973	0.976

Congressional Bills - Issue Topic Classification (+,+,+)

Table C8: Congressional Bills - Issue Topic Classification Performance Metrics (GPT 4o) - (+,+,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.580	0.423	0.490	0.566	0.413	0.478	0.530	0.316	0.396	0.525	0.434	0.475	0.465	0.684	0.554
2	0.721	0.660	0.689	0.739	0.691	0.714	0.773	0.617	0.686	0.841	0.564	0.675	0.845	0.521	0.645
3	0.768	0.786	0.777	0.791	0.797	0.794	0.803	0.817	0.810	0.803	0.786	0.795	0.804	0.807	0.805
4	0.841	0.777	0.807	0.827	0.777	0.801	0.839	0.766	0.801	0.814	0.756	0.784	0.807	0.741	0.772
5	0.797	0.583	0.674	0.810	0.607	0.694	0.754	0.565	0.646	0.717	0.542	0.617	0.711	0.542	0.615
6	0.806	0.704	0.752	0.789	0.704	0.744	0.786	0.717	0.750	0.753	0.711	0.731	0.722	0.736	0.729
7	0.742	0.695	0.718	0.760	0.695	0.726	0.701	0.730	0.715	0.620	0.695	0.656	0.617	0.766	0.684
8	0.848	0.651	0.737	0.837	0.674	0.747	0.845	0.721	0.778	0.812	0.736	0.772	0.752	0.729	0.740
9	0.810	0.895	0.850	0.823	0.855	0.839	0.868	0.868	0.868	0.872	0.895	0.883	0.838	0.882	0.859
10	0.878	0.677	0.764	0.868	0.702	0.776	0.872	0.728	0.794	0.883	0.774	0.825	0.901	0.774	0.833
12	0.777	0.482	0.595	0.757	0.513	0.612	0.703	0.540	0.611	0.703	0.518	0.596	0.712	0.518	0.599
13	0.595	0.742	0.660	0.624	0.779	0.693	0.645	0.737	0.688	0.627	0.674	0.650	0.676	0.626	0.650
14	0.658	0.565	0.608	0.655	0.598	0.625	0.646	0.576	0.609	0.618	0.511	0.560	0.577	0.489	0.529
15	0.553	0.699	0.617	0.525	0.714	0.605	0.435	0.684	0.532	0.416	0.602	0.492	0.564	0.494	0.527
16	0.724	0.850	0.782	0.745	0.834	0.787	0.752	0.820	0.785	0.720	0.790	0.753	0.724	0.785	0.753
17	0.614	0.864	0.718	0.619	0.881	0.727	0.646	0.864	0.739	0.615	0.814	0.701	0.576	0.831	0.681
18	0.829	0.895	0.861	0.841	0.904	0.871	0.828	0.908	0.866	0.846	0.890	0.868	0.839	0.890	0.864
19	0.585	0.729	0.649	0.537	0.682	0.601	0.628	0.694	0.659	0.604	0.682	0.641	0.556	0.588	0.571
20	0.705	0.715	0.710	0.749	0.715	0.732	0.718	0.684	0.700	0.732	0.700	0.716	0.713	0.682	0.697
21	0.740	0.804	0.771	0.743	0.787	0.764	0.756	0.765	0.760	0.708	0.745	0.726	0.726	0.755	0.740
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.968	0.976	0.972	0.976	0.976	0.976	0.979	0.980	0.979	0.981	0.979	0.980	0.980	0.978	0.979

Congressional Bills - Issue Topic Classification (-,-,-)

Table C9: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (-,-,-)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.533	0.617	0.572	0.578	0.587	0.582	0.505	0.719	0.594	0.435	0.735	0.546	0.448	0.770	0.567
2	0.682	0.479	0.562	0.690	0.426	0.526	0.763	0.479	0.588	0.787	0.511	0.619	0.803	0.521	0.632
3	0.760	0.878	0.814	0.738	0.861	0.795	0.764	0.854	0.806	0.768	0.831	0.798	0.742	0.800	0.770
4	0.659	0.843	0.739	0.694	0.817	0.751	0.718	0.777	0.746	0.742	0.746	0.744	0.763	0.736	0.749
5	0.406	0.744	0.525	0.417	0.798	0.548	0.463	0.708	0.560	0.566	0.667	0.612	0.618	0.637	0.628
6	0.746	0.811	0.777	0.707	0.818	0.758	0.728	0.824	0.773	0.753	0.805	0.778	0.762	0.824	0.792
7	0.752	0.667	0.707	0.707	0.702	0.705	0.748	0.695	0.721	0.693	0.738	0.715	0.693	0.752	0.721
8	0.795	0.783	0.789	0.782	0.806	0.794	0.789	0.814	0.802	0.756	0.791	0.773	0.826	0.845	0.835
9	0.759	0.868	0.810	0.774	0.855	0.812	0.765	0.816	0.790	0.782	0.895	0.834	0.778	0.829	0.803
10	0.806	0.779	0.792	0.786	0.783	0.785	0.811	0.787	0.799	0.833	0.787	0.810	0.821	0.779	0.799
12	0.648	0.714	0.679	0.643	0.723	0.681	0.654	0.719	0.685	0.664	0.696	0.680	0.677	0.656	0.667
13	0.512	0.700	0.591	0.459	0.711	0.558	0.520	0.737	0.610	0.512	0.695	0.589	0.438	0.700	0.538
14	0.566	0.609	0.586	0.548	0.620	0.582	0.524	0.598	0.558	0.521	0.543	0.532	0.548	0.554	0.551
15	0.697	0.342	0.459	0.715	0.383	0.499	0.793	0.398	0.530	0.745	0.413	0.531	0.732	0.446	0.554
16	0.788	0.365	0.499	0.831	0.403	0.543	0.850	0.523	0.648	0.801	0.526	0.635	0.804	0.425	0.556
17	0.535	0.644	0.585	0.558	0.729	0.632	0.521	0.831	0.641	0.547	0.797	0.648	0.554	0.780	0.648
18	0.884	0.873	0.879	0.865	0.873	0.869	0.837	0.877	0.857	0.831	0.882	0.855	0.843	0.868	0.855
19	0.560	0.600	0.580	0.600	0.635	0.617	0.562	0.694	0.621	0.580	0.600	0.590	0.543	0.588	0.565
20	0.631	0.594	0.612	0.633	0.534	0.579	0.704	0.534	0.607	0.698	0.590	0.640	0.679	0.631	0.654
21	0.751	0.644	0.693	0.802	0.621	0.700	0.789	0.646	0.710	0.775	0.656	0.710	0.788	0.661	0.719
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.971	0.967	0.969	0.984	0.964	0.974	0.979	0.972	0.975	0.992	0.967	0.979	0.989	0.967	0.978

Congressional Bills - Issue Topic Classification (-,-,+)

Table C10: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (-,-,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.703	0.327	0.446	0.702	0.337	0.455	0.600	0.367	0.456	0.548	0.408	0.468	0.587	0.413	0.485
2	0.710	0.521	0.601	0.721	0.521	0.605	0.800	0.553	0.654	0.732	0.553	0.630	0.800	0.511	0.623
3	0.783	0.834	0.808	0.773	0.844	0.807	0.788	0.831	0.809	0.779	0.875	0.824	0.761	0.810	0.785
4	0.717	0.822	0.766	0.734	0.812	0.771	0.800	0.792	0.796	0.799	0.746	0.772	0.763	0.766	0.765
5	0.467	0.762	0.579	0.488	0.726	0.584	0.529	0.643	0.581	0.639	0.601	0.620	0.625	0.536	0.577
6	0.757	0.805	0.780	0.740	0.824	0.780	0.739	0.818	0.776	0.743	0.818	0.778	0.740	0.805	0.771
7	0.688	0.752	0.719	0.677	0.745	0.709	0.673	0.716	0.694	0.684	0.766	0.722	0.621	0.780	0.692
8	0.829	0.791	0.810	0.805	0.798	0.802	0.800	0.775	0.787	0.774	0.822	0.797	0.819	0.806	0.812
9	0.776	0.868	0.820	0.790	0.842	0.815	0.771	0.842	0.805	0.807	0.882	0.843	0.787	0.829	0.808
10	0.799	0.813	0.806	0.790	0.800	0.795	0.819	0.770	0.794	0.833	0.766	0.798	0.854	0.770	0.810
12	0.663	0.719	0.690	0.677	0.701	0.689	0.657	0.683	0.670	0.649	0.643	0.646	0.707	0.710	0.708
13	0.485	0.774	0.596	0.437	0.784	0.561	0.460	0.816	0.588	0.454	0.774	0.572	0.417	0.758	0.538
14	0.533	0.609	0.569	0.524	0.587	0.554	0.495	0.565	0.528	0.529	0.587	0.557	0.515	0.543	0.529
15	0.509	0.520	0.515	0.469	0.532	0.498	0.419	0.539	0.472	0.423	0.554	0.480	0.442	0.599	0.509
16	0.810	0.463	0.589	0.849	0.398	0.542	0.827	0.455	0.587	0.844	0.485	0.616	0.814	0.431	0.563
17	0.542	0.661	0.595	0.564	0.746	0.642	0.483	0.729	0.581	0.532	0.712	0.609	0.524	0.746	0.615
18	0.878	0.882	0.880	0.861	0.868	0.865	0.830	0.877	0.853	0.843	0.873	0.858	0.853	0.868	0.861
19	0.602	0.694	0.645	0.628	0.694	0.659	0.550	0.706	0.619	0.640	0.647	0.643	0.554	0.600	0.576
20	0.677	0.612	0.643	0.660	0.567	0.610	0.693	0.561	0.620	0.706	0.598	0.648	0.702	0.629	0.663
21	0.776	0.636	0.699	0.762	0.666	0.711	0.780	0.651	0.710	0.787	0.686	0.733	0.786	0.673	0.725
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.979	0.973	0.976	0.989	0.968	0.978	0.981	0.970	0.976	0.987	0.970	0.979	0.987	0.969	0.978

Congressional Bills - Issue Topic Classification (-,+,-)

Table C11: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (-,+,-)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.772	0.224	0.348	0.758	0.255	0.382	0.638	0.189	0.291	0.525	0.270	0.357	0.492	0.444	0.466
2	0.817	0.521	0.636	0.770	0.500	0.606	0.852	0.553	0.671	0.836	0.543	0.658	0.841	0.564	0.675
3	0.822	0.797	0.809	0.794	0.759	0.776	0.803	0.732	0.766	0.812	0.749	0.780	0.787	0.739	0.762
4	0.700	0.792	0.743	0.744	0.782	0.762	0.768	0.756	0.762	0.757	0.711	0.733	0.769	0.711	0.739
5	0.575	0.756	0.653	0.571	0.744	0.646	0.646	0.696	0.670	0.699	0.649	0.673	0.698	0.673	0.685
6	0.796	0.686	0.736	0.769	0.711	0.739	0.775	0.692	0.731	0.801	0.686	0.739	0.793	0.698	0.742
7	0.812	0.674	0.736	0.769	0.709	0.738	0.754	0.674	0.712	0.709	0.745	0.727	0.645	0.787	0.709
8	0.852	0.713	0.776	0.843	0.752	0.795	0.816	0.791	0.803	0.741	0.775	0.758	0.778	0.814	0.795
9	0.680	0.808	0.763	0.771	0.842	0.805	0.778	0.829	0.803	0.753	0.842	0.795	0.778	0.829	0.803
10	0.831	0.711	0.766	0.789	0.715	0.750	0.844	0.715	0.774	0.845	0.719	0.777	0.859	0.723	0.785
12	0.729	0.647	0.686	0.706	0.688	0.697	0.702	0.674	0.688	0.675	0.638	0.656	0.687	0.696	0.692
13	0.665	0.711	0.687	0.577	0.747	0.651	0.623	0.721	0.668	0.614	0.737	0.670	0.639	0.689	0.663
14	0.585	0.522	0.552	0.590	0.533	0.560	0.554	0.500	0.526	0.547	0.511	0.528	0.543	0.478	0.509
15	0.530	0.628	0.575	0.524	0.610	0.564	0.444	0.643	0.525	0.446	0.625	0.520	0.474	0.580	0.522
16	0.725	0.812	0.766	0.735	0.785	0.759	0.722	0.807	0.762	0.731	0.785	0.757	0.731	0.768	0.749
17	0.547	0.797	0.648	0.544	0.831	0.658	0.495	0.864	0.630	0.558	0.898	0.688	0.490	0.814	0.611
18	0.785	0.930	0.851	0.816	0.917	0.864	0.797	0.895	0.843	0.813	0.877	0.844	0.811	0.864	0.837
19	0.555	0.718	0.626	0.486	0.788	0.601	0.516	0.753	0.612	0.519	0.659	0.580	0.510	0.576	0.541
20	0.699	0.665	0.682	0.714	0.611	0.658	0.734	0.631	0.678	0.741	0.665	0.701	0.732	0.664	0.696
21	0.719	0.800	0.757	0.749	0.740	0.745	0.744	0.733	0.738	0.754	0.738	0.746	0.783	0.698	0.738
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.993	0.942	0.967	0.991	0.953	0.972	0.981	0.964	0.973	0.991	0.955	0.973	0.990	0.963	0.977

Congressional Bills - Issue Topic Classification (+,-,-)

Table C12: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (+,-,-)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.435	0.816	0.567	0.449	0.816	0.580	0.422	0.837	0.561	0.416	0.862	0.561	0.427	0.704	0.532
2	0.814	0.606	0.695	0.875	0.596	0.709	0.845	0.638	0.727	0.810	0.543	0.650	0.865	0.479	0.616
3	0.782	0.864	0.821	0.805	0.800	0.803	0.816	0.841	0.828	0.798	0.817	0.807	0.796	0.780	0.788
4	0.776	0.827	0.801	0.759	0.817	0.787	0.776	0.843	0.808	0.754	0.777	0.765	0.793	0.721	0.755
5	0.464	0.720	0.564	0.487	0.679	0.567	0.536	0.661	0.592	0.641	0.637	0.639	0.692	0.548	0.611
6	0.790	0.616	0.693	0.793	0.698	0.742	0.790	0.711	0.748	0.784	0.660	0.717	0.765	0.635	0.694
7	0.805	0.702	0.750	0.803	0.723	0.761	0.780	0.702	0.739	0.726	0.638	0.679	0.739	0.603	0.664
8	0.811	0.798	0.805	0.797	0.822	0.809	0.766	0.837	0.800	0.782	0.752	0.767	0.694	0.597	0.642
9	0.780	0.842	0.810	0.849	0.816	0.832	0.762	0.842	0.800	0.793	0.855	0.823	0.786	0.724	0.753
10	0.856	0.787	0.820	0.847	0.779	0.812	0.858	0.770	0.812	0.880	0.749	0.809	0.862	0.694	0.769
12	0.711	0.616	0.660	0.717	0.634	0.673	0.687	0.665	0.676	0.684	0.688	0.686	0.707	0.603	0.651
13	0.629	0.758	0.687	0.529	0.768	0.627	0.615	0.732	0.668	0.561	0.653	0.603	0.519	0.589	0.552
14	0.576	0.533	0.554	0.576	0.533	0.554	0.537	0.554	0.545	0.553	0.511	0.531	0.578	0.522	0.549
15	0.776	0.528	0.628	0.771	0.539	0.635	0.745	0.532	0.620	0.777	0.532	0.631	0.761	0.461	0.574
16	0.785	0.589	0.673	0.783	0.591	0.674	0.814	0.668	0.734	0.814	0.608	0.696	0.838	0.480	0.610
17	0.697	0.780	0.736	0.645	0.831	0.726	0.645	0.831	0.726	0.593	0.814	0.686	0.625	0.763	0.687
18	0.852	0.886	0.869	0.835	0.890	0.862	0.854	0.895	0.874	0.860	0.838	0.849	0.845	0.715	0.774
19	0.699	0.600	0.646	0.646	0.624	0.635	0.611	0.647	0.629	0.598	0.576	0.587	0.495	0.541	0.517
20	0.727	0.623	0.671	0.721	0.634	0.675	0.737	0.605	0.665	0.768	0.640	0.698	0.746	0.548	0.632
21	0.746	0.757	0.752	0.782	0.738	0.759	0.810	0.728	0.767	0.778	0.676	0.723	0.765	0.614	0.681
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.981	0.972	0.976	0.986	0.840	0.907	0.989	0.955	0.972	0.991	0.869	0.926	0.995	0.773	0.870

Congressional Bills - Issue Topic Classification (-,+,+)

Table C13: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (-,+,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.750	0.184	0.295	0.734	0.240	0.362	0.671	0.270	0.385	0.597	0.235	0.337	0.593	0.357	0.446
2	0.771	0.574	0.659	0.750	0.638	0.690	0.795	0.617	0.695	0.768	0.564	0.650	0.821	0.585	0.683
3	0.838	0.739	0.786	0.826	0.742	0.782	0.811	0.742	0.775	0.806	0.759	0.782	0.801	0.766	0.783
4	0.802	0.782	0.792	0.800	0.772	0.786	0.808	0.726	0.765	0.793	0.721	0.755	0.807	0.741	0.772
5	0.665	0.625	0.644	0.653	0.649	0.651	0.675	0.631	0.652	0.716	0.571	0.636	0.711	0.542	0.615
6	0.812	0.679	0.740	0.786	0.692	0.736	0.790	0.711	0.748	0.778	0.704	0.739	0.799	0.723	0.759
7	0.774	0.681	0.725	0.754	0.695	0.723	0.691	0.730	0.710	0.699	0.723	0.711	0.704	0.709	0.707
8	0.857	0.698	0.769	0.835	0.744	0.787	0.831	0.798	0.814	0.774	0.822	0.797	0.805	0.829	0.817
9	0.835	0.808	0.852	0.802	0.855	0.828	0.780	0.842	0.810	0.790	0.842	0.815	0.771	0.842	0.805
10	0.851	0.728	0.784	0.836	0.715	0.771	0.832	0.757	0.793	0.873	0.732	0.796	0.870	0.766	0.814
12	0.686	0.683	0.685	0.707	0.679	0.692	0.679	0.661	0.670	0.714	0.656	0.684	0.659	0.656	0.658
13	0.633	0.763	0.692	0.601	0.800	0.686	0.565	0.779	0.655	0.564	0.768	0.650	0.580	0.763	0.659
14	0.627	0.511	0.563	0.605	0.533	0.566	0.543	0.554	0.548	0.568	0.543	0.556	0.562	0.543	0.552
15	0.402	0.673	0.503	0.443	0.639	0.524	0.445	0.632	0.522	0.388	0.602	0.472	0.417	0.599	0.492
16	0.749	0.787	0.768	0.750	0.768	0.759	0.739	0.787	0.763	0.749	0.733	0.741	0.763	0.728	0.745
17	0.540	0.797	0.644	0.510	0.831	0.632	0.485	0.797	0.603	0.521	0.847	0.645	0.536	0.881	0.667
18	0.869	0.904	0.886	0.843	0.895	0.868	0.839	0.868	0.853	0.828	0.846	0.837	0.833	0.851	0.842
19	0.578	0.741	0.649	0.545	0.788	0.644	0.546	0.765	0.637	0.514	0.647	0.573	0.530	0.624	0.573
20	0.707	0.680	0.693	0.722	0.656	0.688	0.739	0.636	0.684	0.720	0.658	0.688	0.724	0.638	0.678
21	0.730	0.822	0.773	0.726	0.787	0.755	0.775	0.750	0.762	0.741	0.750	0.745	0.749	0.767	0.758
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.983	0.976	0.980	0.988	0.962	0.975	0.987	0.960	0.973	0.990	0.961	0.975	0.990	0.966	0.978

Congressional Bills - Issue Topic Classification (+,-,+)

Table C14: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (+,-,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.533	0.571	0.552	0.577	0.571	0.574	0.498	0.551	0.523	0.493	0.510	0.501	0.513	0.520	0.516
2	0.794	0.574	0.667	0.779	0.638	0.702	0.811	0.638	0.714	0.833	0.585	0.688	0.815	0.564	0.667
3	0.796	0.844	0.819	0.807	0.820	0.813	0.815	0.837	0.826	0.792	0.864	0.827	0.759	0.888	0.819
4	0.788	0.832	0.810	0.796	0.812	0.804	0.806	0.822	0.814	0.801	0.797	0.799	0.800	0.772	0.786
5	0.569	0.732	0.641	0.546	0.738	0.628	0.557	0.637	0.594	0.635	0.631	0.633	0.654	0.631	0.642
6	0.820	0.686	0.747	0.799	0.723	0.759	0.788	0.774	0.781	0.769	0.755	0.762	0.767	0.767	0.767
7	0.820	0.745	0.781	0.759	0.738	0.748	0.739	0.723	0.731	0.779	0.752	0.765	0.750	0.745	0.747
8	0.831	0.798	0.814	0.810	0.791	0.800	0.775	0.853	0.812	0.784	0.814	0.798	0.766	0.814	0.789
9	0.825	0.868	0.846	0.805	0.868	0.835	0.823	0.855	0.839	0.765	0.855	0.807	0.774	0.855	0.812
10	0.857	0.791	0.823	0.835	0.796	0.815	0.844	0.783	0.812	0.866	0.770	0.815	0.844	0.757	0.798
12	0.681	0.629	0.654	0.709	0.621	0.662	0.684	0.647	0.665	0.696	0.737	0.716	0.704	0.723	0.714
13	0.549	0.789	0.648	0.494	0.847	0.624	0.534	0.795	0.638	0.504	0.737	0.598	0.531	0.726	0.613
14	0.551	0.587	0.568	0.600	0.652	0.625	0.533	0.609	0.569	0.539	0.598	0.567	0.542	0.565	0.553
15	0.586	0.584	0.585	0.607	0.621	0.614	0.526	0.602	0.562	0.523	0.639	0.575	0.521	0.636	0.573
16	0.781	0.662	0.717	0.792	0.569	0.662	0.827	0.610	0.702	0.815	0.578	0.676	0.854	0.575	0.687
17	0.662	0.864	0.750	0.634	0.881	0.738	0.600	0.864	0.708	0.576	0.831	0.681	0.608	0.814	0.696
18	0.867	0.886	0.876	0.845	0.864	0.855	0.862	0.851	0.857	0.853	0.868	0.861	0.857	0.842	0.850
19	0.675	0.635	0.655	0.617	0.682	0.648	0.549	0.659	0.599	0.592	0.682	0.634	0.557	0.635	0.593
20	0.728	0.665	0.695	0.711	0.640	0.674	0.732	0.638	0.682	0.735	0.665	0.699	0.732	0.673	0.701
21	0.774	0.752	0.763	0.778	0.748	0.763	0.801	0.705	0.750	0.803	0.728	0.764	0.763	0.740	0.751
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.976	0.976	0.976	0.991	0.966	0.978	0.988	0.973	0.980	0.994	0.967	0.980	0.990	0.964	0.977

Congressional Bills - Issue Topic Classification (+,+, -)

Table C15: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (+,+, -)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.586	0.607	0.596	0.527	0.699	0.601	0.454	0.658	0.537	0.467	0.694	0.559	0.465	0.811	0.591
2	0.869	0.564	0.684	0.836	0.596	0.696	0.906	0.617	0.734	0.815	0.564	0.667	0.836	0.543	0.658
3	0.815	0.820	0.818	0.822	0.783	0.802	0.844	0.786	0.814	0.816	0.810	0.813	0.810	0.810	0.810
4	0.758	0.746	0.752	0.804	0.812	0.808	0.800	0.812	0.806	0.788	0.756	0.772	0.791	0.751	0.771
5	0.643	0.762	0.698	0.642	0.726	0.682	0.728	0.685	0.706	0.772	0.685	0.726	0.779	0.649	0.708
6	0.843	0.673	0.748	0.843	0.642	0.729	0.827	0.660	0.734	0.800	0.629	0.704	0.795	0.635	0.706
7	0.881	0.631	0.736	0.858	0.645	0.737	0.855	0.667	0.749	0.777	0.716	0.745	0.774	0.730	0.752
8	0.846	0.806	0.825	0.797	0.791	0.794	0.786	0.853	0.818	0.768	0.845	0.804	0.706	0.876	0.782
9	0.800	0.842	0.821	0.782	0.803	0.792	0.842	0.842	0.842	0.787	0.829	0.808	0.778	0.829	0.803
10	0.860	0.706	0.776	0.881	0.723	0.794	0.887	0.766	0.822	0.883	0.770	0.823	0.891	0.800	0.843
12	0.767	0.616	0.683	0.761	0.612	0.678	0.752	0.679	0.714	0.694	0.688	0.691	0.726	0.696	0.711
13	0.715	0.700	0.707	0.626	0.774	0.692	0.659	0.721	0.688	0.683	0.716	0.699	0.673	0.705	0.689
14	0.662	0.489	0.562	0.652	0.489	0.559	0.598	0.533	0.563	0.506	0.489	0.497	0.577	0.489	0.529
15	0.673	0.651	0.662	0.702	0.632	0.665	0.638	0.617	0.628	0.651	0.569	0.607	0.769	0.532	0.629
16	0.756	0.809	0.782	0.754	0.793	0.773	0.730	0.790	0.759	0.734	0.787	0.760	0.722	0.744	0.733
17	0.658	0.881	0.754	0.609	0.898	0.726	0.568	0.847	0.680	0.570	0.898	0.697	0.565	0.814	0.667
18	0.762	0.939	0.841	0.786	0.934	0.854	0.822	0.912	0.865	0.826	0.877	0.851	0.811	0.886	0.847
19	0.621	0.694	0.656	0.544	0.729	0.623	0.581	0.718	0.642	0.576	0.671	0.620	0.505	0.647	0.567
20	0.696	0.728	0.711	0.728	0.704	0.716	0.761	0.700	0.730	0.765	0.709	0.736	0.744	0.695	0.718
21	0.729	0.819	0.772	0.748	0.795	0.771	0.783	0.777	0.780	0.770	0.752	0.761	0.799	0.760	0.779
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.993	0.969	0.981	0.994	0.924	0.958	0.989	0.964	0.977	0.994	0.956	0.975	0.995	0.956	0.975

Congressional Bills - Issue Topic Classification (+,+,+)

Table C16: Congressional Bills - Issue Topic Classification Performance Metrics (Gemini 2.0 Flash) - (+,+,+)

Class	1			10			100			500			1000		
	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
1	0.480	0.480	0.480	0.607	0.520	0.560	0.547	0.531	0.539	0.534	0.556	0.545	0.523	0.526	0.524
2	0.845	0.638	0.727	0.816	0.660	0.729	0.847	0.649	0.735	0.848	0.596	0.700	0.841	0.564	0.675
3	0.829	0.790	0.809	0.836	0.759	0.796	0.835	0.773	0.803	0.829	0.790	0.809	0.812	0.807	0.810
4	0.815	0.782	0.798	0.828	0.782	0.804	0.817	0.792	0.804	0.807	0.766	0.786	0.839	0.766	0.801
5	0.665	0.685	0.674	0.670	0.702	0.686	0.709	0.637	0.671	0.754	0.619	0.680	0.752	0.595	0.664
6	0.858	0.648	0.738	0.837	0.679	0.750	0.828	0.698	0.758	0.784	0.686	0.732	0.803	0.692	0.743
7	0.852	0.695	0.766	0.775	0.709	0.741	0.774	0.681	0.725	0.776	0.738	0.756	0.695	0.745	0.719
8	0.828	0.744	0.784	0.812	0.806	0.809	0.811	0.829	0.820	0.794	0.837	0.815	0.766	0.814	0.789
9	0.786	0.808	0.825	0.818	0.829	0.824	0.816	0.816	0.816	0.793	0.908	0.847	0.810	0.842	0.826
10	0.861	0.762	0.808	0.872	0.783	0.825	0.882	0.762	0.817	0.856	0.783	0.818	0.876	0.779	0.824
12	0.710	0.612	0.657	0.743	0.607	0.668	0.728	0.656	0.690	0.708	0.692	0.700	0.706	0.772	0.738
13	0.638	0.779	0.701	0.566	0.816	0.668	0.578	0.779	0.664	0.618	0.800	0.697	0.582	0.784	0.668
14	0.608	0.489	0.542	0.645	0.533	0.583	0.612	0.565	0.588	0.538	0.533	0.536	0.529	0.500	0.514
15	0.546	0.680	0.606	0.580	0.714	0.640	0.525	0.662	0.586	0.532	0.613	0.570	0.563	0.632	0.595
16	0.763	0.798	0.780	0.780	0.782	0.781	0.751	0.787	0.769	0.745	0.747	0.746	0.739	0.757	0.748
17	0.640	0.814	0.716	0.607	0.864	0.713	0.595	0.847	0.699	0.607	0.804	0.713	0.568	0.780	0.657
18	0.851	0.904	0.877	0.830	0.921	0.873	0.826	0.877	0.851	0.828	0.868	0.848	0.819	0.855	0.837
19	0.663	0.671	0.667	0.543	0.741	0.627	0.531	0.706	0.606	0.552	0.682	0.611	0.534	0.647	0.585
20	0.718	0.717	0.717	0.750	0.695	0.721	0.766	0.675	0.717	0.745	0.684	0.713	0.779	0.676	0.724
21	0.758	0.814	0.785	0.773	0.809	0.791	0.768	0.780	0.774	0.779	0.767	0.773	0.775	0.777	0.776
23	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
99	0.984	0.969	0.977	0.993	0.962	0.977	0.989	0.966	0.977	0.995	0.961	0.978	0.994	0.962	0.978

ANES (MIP) - Emotionality Classification (-,-,-)

Table C17: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (-,-,-)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.963	0.339	0.502	0.969	0.692	0.808	0.957	0.869	0.911	0.960	0.875	0.915
1	0.310	0.958	0.469	0.484	0.930	0.636	0.674	0.873	0.761	0.688	0.881	0.772

ANES (MIP) - Emotionality Classification (-,-,+)

Table C18: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (-,-,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.981	0.688	0.809	0.954	0.824	0.885	0.966	0.856	0.907	0.957	0.885	0.920
1	0.488	0.958	0.646	0.607	0.873	0.716	0.659	0.901	0.762	0.702	0.871	0.777

ANES (MIP) - Emotionality Classification (-,+, -)

Table C19: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (-,+, -)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.977	0.551	0.705	0.963	0.730	0.830	0.959	0.872	0.914	0.960	0.891	0.924
1	0.398	0.958	0.562	0.511	0.909	0.654	0.682	0.880	0.768	0.715	0.880	0.789

ANES (MIP) - Emotionality Classification (+,-,-)

Table C20: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (+,-,-)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.973	0.639	0.772	0.944	0.853	0.896	0.883	0.952	0.916	0.873	0.968	0.918
1	0.448	0.944	0.608	0.638	0.837	0.724	0.793	0.594	0.679	0.842	0.545	0.661

ANES (MIP) - Emotionality Classification (-,+,+)

Table C21: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (-,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.969	0.675	0.796	0.945	0.874	0.908	0.943	0.864	0.902	0.959	0.850	0.901
1	0.470	0.930	0.624	0.674	0.837	0.746	0.655	0.831	0.733	0.646	0.881	0.746

ANES (MIP) - Emotionality Classification (+,-,+)

Table C22: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (+,-,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.973	0.792	0.873	0.948	0.893	0.919	0.941	0.908	0.924	0.875	0.974	0.922
1	0.581	0.930	0.715	0.709	0.842	0.770	0.734	0.817	0.773	0.867	0.552	0.675

ANES (MIP) - Emotionality Classification (+,+,+)

Table C23: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (+,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.961	0.755	0.846	0.945	0.854	0.897	0.885	0.952	0.917	0.847	0.974	0.906
1	0.533	0.901	0.670	0.641	0.839	0.727	0.795	0.600	0.684	0.843	0.431	0.566

ANES (MIP) - Emotionality Classification (+,+,+)

Table C24: ANES (MIP) - Emotionality Classification Performance
Metrics (Gemini 2.0 Flash) - (+,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.951	0.900	0.925	0.948	0.930	0.939	0.925	0.941	0.933	0.851	0.981	0.911
1	0.725	0.852	0.783	0.788	0.836	0.812	0.798	0.754	0.775	0.881	0.444	0.583

ANES (MIP) - Emotionality Classification (-,-,-)

Table C25: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (-,-,-)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.968	0.660	0.785	0.986	0.706	0.823	0.968	0.768	0.856	0.960	0.788	0.865
1	0.459	0.930	0.615	0.505	0.967	0.663	0.551	0.918	0.689	0.570	0.894	0.695

ANES (MIP) - Emotionality Classification (-,-,+)

Table C26: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (-,-,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.942	0.916	0.929	0.948	0.862	0.903	0.938	0.880	0.908	0.936	0.898	0.916
1	0.751	0.817	0.783	0.657	0.847	0.740	0.679	0.813	0.740	0.718	0.799	0.751

ANES (MIP) - Emotionality Classification (-,+, -)

Table C27: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (-,+, -)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.967	0.756	0.849	0.943	0.852	0.895	0.952	0.847	0.896	0.952	0.883	0.916
1	0.539	0.918	0.679	0.637	0.834	0.722	0.637	0.861	0.732	0.695	0.856	0.767

ANES (MIP) - Emotionality Classification (+,-,-)

Table C28: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (+,-,-)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.953	0.888	0.919	0.957	0.815	0.880	0.987	0.727	0.837	0.983	0.724	0.834
1	0.704	0.859	0.774	0.596	0.881	0.711	0.524	0.968	0.680	0.520	0.959	0.674

ANES (MIP) - Emotionality Classification (-,+,+)

Table C29: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (-,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.896	0.961	0.927	0.896	0.914	0.905	0.891	0.952	0.920	0.899	0.941	0.920
1	0.837	0.639	0.725	0.704	0.658	0.680	0.801	0.623	0.701	0.777	0.658	0.712

ANES (MIP) - Emotionality Classification (+,-,+)

Table C30: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (+,-,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.938	0.892	0.915	0.945	0.823	0.880	0.946	0.843	0.892	0.942	0.875	0.907
1	0.700	0.810	0.751	0.597	0.844	0.699	0.626	0.846	0.719	0.672	0.827	0.742

ANES (MIP) - Emotionality Classification (+,+,+)

Table C31: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (+,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.946	0.884	0.914	0.935	0.876	0.905	0.914	0.890	0.902	0.946	0.852	0.896
1	0.691	0.837	0.757	0.668	0.805	0.730	0.673	0.730	0.700	0.639	0.843	0.727

ANES (MIP) - Emotionality Classification (+,+,+)

Table C32: ANES (MIP) - Emotionality Classification Performance
Metrics (GPT 4o) - (+,+,+)

Class	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1	Precision	Recall	F1
	1			10			100			300		
0	0.905	0.951	0.927	0.922	0.897	0.909	0.901	0.908	0.904	0.927	0.910	0.919
1	0.811	0.677	0.738	0.695	0.754	0.723	0.695	0.678	0.686	0.728	0.769	0.748