AI Data Centers in the United States: A Media Framing Analysis

Erik Gustafson, University of Texas at Tyler

Abstract

Artificial Intelligence (AI) has promised to revolutionize education, healthcare, financial markets, logistics, warfare, and virtually all other aspects of human life. For AI to realize its full potential it requires an exorbitant amount of infrastructural resources. To address this shortage, private companies and governments have begun to invest heavily in the expansion and construction of massive data centers to power the 24/7 processing needs of AI software. However, there have been extensive concerns surrounding the economic and environmental feasibility and sustainability of the operation of AI data centers. Thus, the present article employed media framing to investigate the popular press coverage of the development of data centers for AI advancement. Through a qualitative analysis of the frame characteristics of AI data center construction projects by mainstream newspapers in the United States, three primary frames were identified. Broad implications of these framings were drawn for the support and sustainability of future AI development.

Keywords: Artificial Intelligence (AI), Media Framing, AI Data Centers, Environmental Communication, Environmental Sustainability, New Media

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At the time of this writing, it is already passé to announce that artificial intelligence (AI) programs have taken the world by storm. First felt most intensely in academia, the rollout of OpenAI's Large Language Model (LLM), ChatGPT4 in August 2022 has redefined authorship, literacy, and reading standards at the bedrock of education (Hasanein & Sobaih, 2023; Henestrosa & Kimmerle, 2024). But, as initial concerns simmer, new releases such as GPT-5 launched August 7, 2025, claim to have Ph.D. level intelligence that may improve the education of a new generation of learners (Jamali & McMahon, 2025; Wang & Fan, 2025).

Governments have begun to invest heavily in AI defense systems for facial recognition, cryptography, and a host of other offensive and defensive systems that have been heralded to make society safer than ever (The White House, 2025; King, 2025). Use of AI in financial modeling has pointed to better fraud protection, market predictions, and automated trading optimizing gains (Butner, 2025; Eastwood, 2024). AI is being experimented with in health trials and disease identification and prevention that some claim, though there are varying opinions, may eventually eradicate currently life-threatening diseases such as cancer (Wong, 2025; Zhang et al, 2023). Although there are still many ardent detractors, AI has been held up as an era-defining technology that will improve human lives.

However, to accomplish such lofty goals, AI companies and technologies require extensive material and energy resources. AI has proven to require exponentially more energy than its technological predecessors and has spurred hundreds of billions of dollars of investments in the construction of massive data processing centers across the United States (Holland, 2025; Kimball, 2025). Many of these data centers rely on unregulated and non-standardized processes that often employ carbon-intensive resources and inefficient building materials that have caused widespread concerns about water, air, and soil contamination, as

well as increased energy costs for residents in the surrounding areas (Khosravi et. al, 2024; Levy, 2025). According to MIT, the energy usage of data centers remained largely constant between 2005 and 2017, but nearly doubled between 2017 and 2023, accounting for 4.4% of all energy usage in the United States (O'Donnel & Crownhart, 2025). Moreover, this figure could rise to 22% of total usage by 2028 (O'Donnel & Crownhart, 2025). While some push to move forward, others caution against the "natural limit" imposed by global resources (Shapero, 2025; Wolman & Kashinsky, 2025). Therefore, AI development has a critical tension between possibilities of the technology and the resources needed to achieve those feats of science and technology.

Thus, the present article sought to analyze the popular press news framing of the expansion of data centers in the United States to identify how this issue is being portrayed to the public. To accomplish this task, the article reviewed the existing literature on framing theory and framing of AI and employed a descriptive and thematic coding procedure (Saldana, 2016) to identify three primary framings of the AI Data Center development. From the analysis broad implications were drawn for framing of AI.

Literature Review

Media Framing

Framing theory, first coined and popularized by Erving Goffman, is one of the most frequently employed and ambiguously defined communication theories (D'Angelo, 2002; de Vreese, 2005). For the present study it is not necessary to plumb the nuances of the different theoretical and methodological approaches to framing that has been characterized as a "scattered conceptualization" (Entman, 1993). Instead, it is sufficient to state that the primary concern of media framing is the characteristics that are stressed, and which are neglected, within the presentation of a particular story, object, and/or phenomenon (Blaney, 2017). In short, at the core of media framing is the consideration of the way information is presented.

The frame, or that which is presented or stressed, can be defined by many interdependent components. Put both succinctly and comprehensively by D'Angelo (2017),

> a media frame is a written, spoken, graphical, or visual message that a communicator uses to contextualize a topic, such as a person, event, episode, or issue within a text transmitted to receivers by means of mediation (p. 1).

Importantly, media framing explains that embedded in the presentational choices made on the above characteristics a media frame has the ability to present information in a way that prioritizes or deprioritizes particular interpretations of a person, event, episode, or issue (Chong & Druckman, 2007). In other words, the significance of varying framings mediates individual's interpretations of the external world and the world itself.

Framing Artificial Intelligence

There is a substantial body of literature that has cropped up in the wake of AI development. Seemingly, nearly every academic journal has published articles, or has even created a special issue, that examines AI in their respective field and from their respective approach. Many quantitative scholars have investigated how AI is positively or negative perceived by the public to predict adoption (Grabe & Kamhawi, 2006; Kirkpatrick et. al, 2021). Despite the multitude of articles that will be returned by searching the terms AI, there is relatively limited amount of academic inquiry pertaining to the qualitative framing of AI, though there were several key studies relied upon to inform the present study.

Notably, Fast and Horvitz (2017) analyzed 30 years of coverage on AI by *The New York Times* and found that coverage of AI has been largely optimistic over time. Chuan et. al (2019) analyzed American newspapers between 2008 and 2018 providing additional depth topical and frame-level depth to the contention of Fast and Horvitz (2017). Chuan et. al (2019) found that the dominant topics through which AI was most discussed included business and economy (35%), science and technology (24%), and policy and politics (12%). Of the topics covered, they nearly evenly discussed

benefits (53%) and risks (48%) with articles focusing more heavily on societal impacts (48%) with mixed framing (27%) and personal framing (25%) being less prevalent (Chuan et. al 2019).Additionally, issue framing was largely episodic (61%) compared to thematic framings (27%) and mixed framings (12%) (Chuan et. al, 2019). Put plainly, this indicated the framing of AI was primarily focused on the positive societal impacts in the sectors of business and/or economics with fairly even discussion of risks and benefits interspersed throughout.

Since 2019, the total amount of coverage of AI has increased substantially alongside public concern and usability leading to continued scholarly inquiry (Choi, 2024). Dwyer et. al (2023) studied coverage of AI and Robotics in *The Conversation* and found that in both pre- and post-COVID time-periods, coverage prioritized positive social impacts that reinforced dominant discursive norms surrounding technology as a value-neutral force. Similarly, in analyzing an international sample of articles, Florin et. al (2025) found that the individual actors most prevalent in coverage are from economic and scientific fields with primarily progress and economic consequence frames prevalent, whereas ethics and morality frames are less prevalent. Together, these studies demonstrate a trend towards positive and optimistic framing of AI.

However, to date, most framing analysis of AI do not specify what they mean by the term and/or which specific technologies they are referring to. As a result, there is no available existing research on the framing (presentational or effects) of AI data center development. In failing to treat the different components of AI, such as software and infrastructure, as discrete elements, previous research does not provide a holistic and nuanced view of the development of AI technologies. Thus, more specific and systemic investigations of communicative framing of AI data centers are needed. To address this gap regarding the framing of infrastructural components of AI, the present study sought to answer the following question:

RQ1: How are AI Data Centers framed by mainstream news sources?

Method

To answer RQ1, articles were collected from mainstream newspapers circulated primarily in the United States. Although physical newspaper circulation has been in steep decline in the 21st century, citizens continue to regularly access mainstream newspaper articles through digital subscriptions and exposure (Naseer & Aubin, 2023). Additionally, mainstream newspapers primarily attempt to adhere to traditional journalistic standards of bias and value free reporting. For the present investigation, ProQuest's U.S. Newsstream Collection Database was employed to identify and collect news articles published in the United States between January 1, 2025 and September 1, 2025. Articles were identified in the U.S. Newsstream Collection Database by the term "AI Data Center." Initial search results returned 2,290 results, though articles with only cursory and/or superficial discussion of terms (i.e. articles which merely used the term AI, data, or center at least once in text) were omitted from analysis. Additionally, only general interest news stories were included in the sample; business-specific and technology-specific publications were excluded. Sorted by relevance (i.e. the number of times the search term appears in the article), the researcher viewed 200 articles before achieving saturation of the thematic qualitative data. While 200 articles were reviewed, the analysis encased in the pages to follow relied on 26 exemplar articles due to their content portraying the most developed characteristics of the frames present across coverage.

Analytic Procedures

To systematize the qualitative framing analysis, descriptive and thematic coding were employed to address the headlines and texts of the news articles present in the sample. In line with Saldaña (2016), descriptive coding involved assigning basic labels to data points (i.e. words and images). Next, thematic coding was employed to group together key data points into larger categories emblematic of broader themes. Thematic coding is particularly important because it builds on the finding Kirkpatrick et. al (2021) that found thematic framing to be a stronger predictor of priming effects for individuals. Additionally, the most prevalent frames of AI in general

as identified in previous literature (e.g., business/economic, technology/science, and policy/politics frames) were considered when identifying and analyzing the presentational contents of such topical frames as well as other topical frames that arose. Thus, through descriptive and thematic coding the present research provides a deeper investigation of the specific components of themes presented to the public regarding AI data center development in the United States. The descriptors assigned to the frames were based upon 1) terms present in the sample of articles analyzed 2) the relative frequency of the occurrence of the term (or synonymous terms/phrases) across the sample and 3) the degree to which the term characterized the overarching theme. Additionally, the frame names, while they do indeed fit into preexisting frame categories (risk, benefits, business, technology, etc.) as noted in the analysis, were meant to identify the specific components and features that might be highlighted in public and popular framings to influence policy (Boräng et. al, 2014). In sum, the evocation of new frame names should not be considered an obfuscation of existing frames and, nor as a source of frustration as cited in previous literature (Dan and Raupp, 2018). Instead, the frame-names should be considered sub-sects of existing majoring framings identified in previous academic literature while simultaneously alerting readers to the more specific terminology employed in those frames.

Results

Frame 1: "Backbone of Artificial Intelligence"

The first frame, dealing broadly with technology and science frames, identified AI data centers as holding an irreplaceable role in the entire AI venture. As stated by Farrell (2025) writing for *The New York Times*

> These giant buildings house the backbone of the internet – and more recently artificial intelligence systems – using technology and heating and cooling systems to keep the computers inside the centers humming…This largely unglamorous industry is critical for A.I. leaders to get right (para. 5/6).

The above passage from Farrell's (2025) coverage presents AI data centers as central to AI development. Building upon this notion,

Minty's (2025) coverage stated that one of the primary questions that AI needs to grapple with is: "Does the United States have the ability to produce the energy required to power the scores of AI data centers that will dot the American landscape within the next decade?" (para. 2).

Further, coverage by Pressman (2025) in the *Boston Globe* stated that it was believed that "the country had to build more data centers to win a global race for AI dominance" (para. 5). Though there were often concerns built into these articles, the overarching sentiment was most explicitly stated by Minty (2025) contended that AI is like a storm "and like any storm, no one knows exactly where it will end up. The only thing that seems certain is that its on its way and there is no slowing it down" (para. 6). In other words, readers are presented with a sentiment that acknowledges there may be issues, but are told that the projects will continue.

Interestingly, coverage, and general sentiment, surrounding AI data centers places a typically unseen and undiscussed infrastructural technology at the forefront of the conversation. By presenting AI Data centers using "backbone" frames that centralize their role in AI, viewers are shown the tangible impacts of AI development in a more nuanced and complex way that thinking about AI as merely LLMs and robots.

Frame 2: The Price of Powering AI

Another primary theme running through coverage addressed the heavy energy consumption necessary for AI data centers to operate. Brown (2025), writing for *Stateline,* stated that "for the first time in decades, America needs to produce more electricity" (para. 1). Although large scale data centers in their contemporary form were implemented on a large scale in the 1990s and 2000s, AI has overwhelmed the existing infrastructure and required large scale investment and construction across the US (Weise et. al, 2025). As such, a substantial component of coverage was related to the energy consumption of these data centers.

Interestingly, the presentation of energy consumption vacillated between two nodes: energy as a concern and energy as a constraint. For instance, in relation to the latter coverage by Penn

and Weise (2025), Andy Jassy, Amazon's CEO, stated "The single biggest constraint…is power" (para. 6). While coverage indicated many clean energy initiatives, coverage also indicated the immense amount of energy needed and the ways companies were satiating their energy needs. Halper (2025), reporting for *The Washington Post*, noted that companies energy requirements have risen so high that "tech firms looked to [natural] gas amid a shortage of adequate clean energy" (para. 7). Thus, coverage frames the turn from clean energy to fossil fuels as a strategy born of necessity to win the AI race.

Conversely, concerns surrounding the energy of consumption of AI Data Centers centered on the price of energy bills for the average American consumer. Often placed in the headline, phrases such as "driving up electricity bills", "drive up residents' power bills", and "see a spike in their energy bills" were regularly present in the news coverage sampled (Brown, 2025, para. 3; Penn & Weise, 2025, para. 9; Sobko, 2025, para. 2). Perhaps most explicitly, one headline, written by Gross (2025) in the *St. Cloud Times* headline read "As AI data centers increase, so do consumers energy costs" (para. 1). It is well known that news consumers rarely read more than the headline and lead of an article and for that reason it is significant that the primary focus of many headlines directly and explicitly linked AI Data centers, a rather omniscient and scarcely "seen" component of technological infrastructure, to consumer costs, which are of the utmost importance and visibility to consumers.

Importantly, by presenting AI data centers in terms of consumers an inextricable linkage was cast between energy frames and business/economic frames. This linkage was concretized most explicitly in a *Missoulian* article wherein Erickson (2025) stated that the energy needed to power proposed data center, for Texas-based company Quantica Infrastructure, "could power 800,000 homes for a year. Montana had 539,670 housing units in 2024, according to the U.S. Census Bureau" (para. 2). By presenting the energy issue in terms of the household the frame elucidates the personal impact on individuals of the previously unseen and unnoticed data center.

The personalization of energy frames was also contributed to by the implication of specific micro-level practices of consumers. For instance, Gross (2025) writing for the *The Baltimore Sun* started an article with

> the next time you're on a Zoom meeting or asking ChatGPT a question, picture this: The information zips instantaneously through a room of hot, humming servers, traveling hundred, possibly thousands of miles before it makes its way back to you in just a second or two (para. 1).

Here, Gross (2025) moves AI data center impacts even closer to the human experience than the housing corollary drawn above by expressing the impact in terms of keystrokes.

Importantly, this second frame built thematically upon the first frame. If the first frame regarded the infrastructure built, the second frame referred to the energy needed to operate that infrastructure. Thus, frame 2 initially created a material symbiotic relationship – much like that of automobile and oil, human and water, etc. – between two distinct elements in the phenomenon. However, upon further examination, the proportions between costs and benefits to involved parties (i.e. the data center vs. everyday individuals) comes into question primarily by way of increased electricity costs for everyday individuals while corporations receive tax breaks and laxed regulations. Thus, the constraints to powering AI might be considered a corollary to the difference between a symbiotic and a parasitic relationship.

In sum, the framing of AI energy needs is doubly pointed at both the societal and consumer impacts, though data was not collected on the proportions to which each framing was dedicated.

Frame 3: Investments in Opportunity

The third frame is the investment in opportunity frame. Headlines often use terms such as "gold" and "rare opportunity" for all involved parties (Martin, 2025, para. 1 ; Monske, 2025, para. 1). This optimistic framing extended to governments, private companies, and individual consumers. While future studies should mine business publications for more explicit insight on trading

predictions and pricing, general news outlets tended to focus on the dollar amount invested and the impact on the community in terms of jobs.

Perhaps most emblematic of the optimism and excitement is the bi-partisan political support and simply staggering amounts of capital invested. In January 2025 alone, two different U.S. presidents crafted actions to ensure continued AI development. On January 14th, 2025, during his final days in office, then President Joe Biden signed an executive order insuring that AI companies would be able to access the energy needed and, according to Parvini (2025), "directs federal agencies to accelerate large-scale AI infrastructure at government sites, while imposing requirements and safeguards on developers building on those locations" (para. 2). On January 22, 2025, just two days after being inaugurated as President, Donald Trump announced a joint venture, called Stargate intended, which, as covered by Ramaswamy (2025), President Trump stated "will be building physical and virtual infrastructure to power the next generation of advancements in AI" (para. 4). In an era in which political bipartisanship is rare, coverage indicated that both parties are equally interested in advancing AI.

Importantly, and perhaps most compelling, was the monetary amounts for investments. Usually included in the headline, the sheer amount of money was staggering. The Stargate project was listed as a $500 billion investment that would create 100,000 jobs (Ramaswamy, 2025). Amazon announced a $10 billion investment in North Carolina (The Associated Press 2025). Blackstone has, according to Farrell (2025) of *The New York Times,* "put more than $100 billion into buying and lending to data centers, as well as investing in construction firms, natural gas powerplants and the machinery needed to build them" (para. 8). Google announced a $9 billion investment in Oklahoma (The Journal Record Staff, 2025). Applied Digital announced a $3 billion AI center to be built in North Dakota (Harris, 2025). Metz (2025), writing for *The New York Times,* stated "Silicon Valley's artificial intelligence frenzy has found a new gear" (para. 1) indicating that heavy investments were likely to continue. While the above

headlines represent just a handful of stories, there were a significant number of stories that touted billion-dollar partnerships for land, energy, infrastructure, and computing technology necessary to make AI Data centers run.

Included in the coverage of billion-dollar investments was mentions of the jobs that these centers would bring. Within the articles, company representatives across the board reiterate that these AI Data Centers will provide high numbers of high-quality jobs (De Vynck, 2025). While the sheer scale of investment can be daunting, Orenstein (2025), writing for the *Star Tribune*, noted that "even with the risks of data centers, many welcome the jobs and revenue they bring" (para. 49). Put another way by Jad (2025) in the *Pittsburg Post – Gazette,* advocates for AI as the answer to areas, such as Pennsylvania, that have struggled to provide enough high-paying jobs to residents in the area. Thus, opportunity frames are presented as a remedy to a difficult job market.

However, there was a subtle and less covered discrepancy in the presentation of AI data center jobs creation. In the sampled coverage it was noted that there was often a discrepancy between projected and actualities of job creation. For instance, when coverage split pre and post construction jobs, the numbers of jobs created were not as numerous. For instance, it was reported by the *Bismarck Tribune* that Meta's $10 billion investment in North Dakota was touted as creating "500 operations jobs and 5,000 jobs during construction" (Mayo, 2025, para. 2). Lastly, there is a glaring issue with the ratio of investments to jobs. For instance, in the *Milwaukee Journal Sentinel,* Barrett (2025) noted that Microsoft's data center in Mt. Pleasant, WI would create 2000 jobs from its $3.3 billion investment. The ratio of jobs to money invested is 1.65 million dollars per job. If we revisit the $500 billion Stargate project which was touted as leading to 100,000 jobs, then the ratio is 5 million to one job. To put a fine point on it, Sollitt (2025) of *The Salt Lake Tribune* quoted Governor Spencer Cox stating AI data centers "use a lot of resources and don't create a lot of jobs" (para. 5). Overall, the framing of the investments in AI were often coupled with the jobs that would be created and positive community effects.

However, a brief look at the numbers presented reveals a disconnect between what is presented and the actual material reality.

Thus, the third theme talks about investments *in* opportunity – not investments *and* opportunities. The distinction here is important because in this third theme readers are exposed to bipartisan support, massive public and private spending, and claims of jobs creation. However, when considered in light of frame 1 – which presents AI data centers as integral to the supposedly unstoppable AI storm – and with consideration to frame 2 – which outlined how more electricity is needed from sources that serve everyday people – then Frame 3 emerged as mandatory investments in uncertain opportunities. To the financially literate and those active in the markets, all investments assume some degree of risk. But, the only metric that is thus far measurable – i.e. number of jobs created – has been overblown and underdelivered which begs the question as to what realm the opportunities exist in and who they will benefit.

Discussion and Implications

The purpose of the present study was to investigate in-depth the presentational components of frames employed in coverage of AI Data Centers. Building on previous research about AI framing in general, the findings extend understanding of the presentation and content of AI framing in general, while also providing the first explicit framing study on AI data centers. Notably, the analysis of frames largely confirmed, as well as provided more in-depth qualitative descriptors and narratives, for preexisting literature that contended AI framing was predominantly optimistic and business/economics-oriented with an emphasis on progress measured via economic terms (Chuan et. al 2019; Fast & Horvick, 2017; Florin, 2025). Overall, the analysis supported Dwyer and colleagues' (2023) contention that dominant discursive presentations of technology (i.e. that it is important, needed, and inevitable) were reinforced through optimistic economic framings.

Additionally, the three frames (Backbone of AI, The Price of Powering AI, and Investments in Opportunities) illuminated a thematic narrative encapsulating AI data center development. Put

together, audiences are shown a compelling story about AI data centers that presents them as indispensable to progress, as a worthy expenditure, and as an opportunity for both society and individuals that poses minimal (if any) ethical concerns. Insofar as audiences are concerned, this overarching theme constructed by the three frames provides the optimistic and economically positive presentation that can and (at the date of this writing) has justified continued spending on AI data centers. As presented in these frames, the primary concern of AI data centers is to make sure they are allocated enough money and energy to make good on the promise of prosperity for all.

However, as noted above, the optimism for AI data centers is not wholly unbridled. In mentioning energy as a constraint to AI data center development, further journalistic investigation noted the cost deferred to individuals. While corporations have billions to invest, the average American's checkbook feels any increase in their energy bill quite intensely. Under the assumption that AI will benefit all, the inclination towards a collective investment in AI data centers may seem justified. However, as noted above, the job creation numbers cited are misrepresented based on both the total number of jobs created and the ratio of monetary investment to jobs created. While external research has shown that these data centers have created boomtown situations in which local economies are initially invigorated, those injections of jobs and services are largely centered on short-term construction costs, as opposed to the long-term operating needs (Rogoway, 2021; Peacher, 2017). In other words, the presentation of AI data centers as a job creation machine like the internet or past public works initiatives lacks veracity as a substantive claim. Considered in light of massive AI-related layoffs across the U.S., the investments made by governments, corporations, and everyday individuals have not provided meaningful access to the purported benefits and opportunities extolled in the frames.

Limitations and Future Research

Of course, it is important to note that this study is limited by two primary methodological factors. As a descriptive, qualitative

study, the present article is not equipped to make claims about magnitude of frames, reception of frames, and/or causality of frames insofar as action is concerned. Moreover, as an initial and preliminary analysis into the phenomenon that relied on a third-party database with its own proprietary algorithm, it would be ill-advised to consider the sampled general press articles as representative of all coverage regarding AI data centers. Thus, future research should expand and adopt differing sampling procedures to further investigate different framings based on specialized publication types (business, technology, science, etc.) and specific issue framing (environmental concerns, jobs, ethical concerns, etc.). In sum, the present study should be considered a starting point for inquiry on AI data centers.

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