"Is Long-distance Hiking an Emotional Roller Coaster?" Evaluating Emotions and Weather Effects on the Appalachian Trail

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ABSTRACT

The growing prevalence of emotion research in human-computer interaction highlights the crucial role of emotion in understanding humans' behavioral states and experiences. Online media, especially community blogs, enable reflection of people's emotions on a large scale, while emotion recognition offers profound insights into the underlying reasons behind the expressed emotions. Within these capabilities, this paper uses an emotion recognition model and topic modeling analysis to examine Appalachian Trail long-distance hikers' blogs on the Trail Journals platform and identify key driving factors regarding expressed emotions. We also examined the influence of weather, as an inseparable factor of outdoor activities, on hikers' emotions and its nuances in long-distance hiking. The findings emphasize the emotional aspect of long-distance hiking, which can facilitate mental support from the community in the future. We discuss the usefulness of blogs in gaining insight into writers conveying their emotional experiences.

CCS CONCEPTS

• **Human-centered computing**; • **Human computer interaction (HCI)**; • **User studies**;

KEYWORDS

Emotion Recognition, Appalachian Trail, Outdoor Computing, Community Blogs

1 INTRODUCTION

Emotion is a vital component of Human-Computer Interaction (HCI) research, as it can reflect people's experiences [77], leading to growing interest among researchers in CHI and CSCW [1, 7, 9, 89]. Emotion recognition involves perceiving and interpreting data to understand an individual's emotional state [59], offering profound insights into the underlying reasons behind the expressed emotions [8]. In the digital world, people share their experiences, opinions, and feelings on online platforms like blogs and social media [76] for

various reasons, including exchanging support, seeking community, building connections, and extending the presentation of oneself [2, 23, 39, 75]. Due to the ability of blogging communities to convey and evoke emotions [88], utilizing user-generated content offers a deep understanding of individuals' expressed emotional states [27, 52, 78, 93]. This approach has been employed to detect emotion contagion in online media [49, 50], enhance user experience [41, 56], and inform a wide range of behavioral stances [12, 51]. Despite the sophistication of human emotion recognition from large, informal, and unstructured text data across types of individuals, advanced computational models help us gauge the expressed emotions and judge individuals' opinions/behavioral states [10, 37]. We enhance HCI emotion research by identifying factors that shape long-distance hikers' emotional experience through analyzing their community blog texts, which can facilitate timely support within the community.

Long-distance (LD) hiking, which is a physical, social, spiritual, and emotional experience [17, 45, 69], has become popular and is among the fastest-growing recreational activities in the United States [33, 34, 53]. So, the corresponding communities are rapidly spreading on social and online media [47, 72, 75]. Many long-distance hikers find the utilization of online media, particularly blogs, across various stages of their journey (pre-hike, during the hike, and post-hike) fosters self-reflection [38] and a sense of belonging to the community [47]. Hikers who craft and share introspective and thoughtful blogs enrich the discourse by shedding light on their influences, motivations, and emotional experiences that might not be readily apparent. This contrasts with instances like Instagram photos captured at cliff edges using a selfie stick or brief Twitter posts celebrating summit achievements [4, 38]. Numerous factors, including social interactions, personality, weather, location, etc., may affect hikers' emotions on the trail. Given the indispensable nature of outdoor activities, weather conditions and the frequent references to weather variables such as temperature, cloudiness, and precipitation in hikers' stories and journals [47], we hypothesize a promising relationship exists between weather and their emotional states while exploring this association has rarely been researched [94].

This study seeks to (RQ1) recognize the emotional states of long-distance hikers on the Appalachian Trail using basic emotions [20, 21] and uncover the common factors linked to these emotions, and (RQ2) to investigate the influence of weather variables (e.g., precipitation, humidity, temperature, and clouds condition) on hikers' emotional experiences. To this end, we applied an emotion recognition model to analyze the emotional states of long-distance hikers. We then performed topic modeling on hikers' blogs to identify key determinants of emotional expressions. We also utilized statistical analysis to evaluate the influences of weather parameters on hikers' emotions. We present a valuable view of community blogs as a rich resource for gaining insights into members' expressed emotional states. This study additionally highlights the unique aspects of the long-distance hiking community and its niches, particularly regarding the correlations between weather and hikers' emotions during their trail life. We aim to delve into other influential factors on hikers' emotional journey, grasp the weather and emotional condition that prompt hikers to write blogs, and identify situations in which they seek gratification from blogging in future studies.

2 RELATED WORK

This study contributes to the growing body of research that discusses the opportunity of technology, namely online platforms that facilitate community blogs and self-narratives within outdoor contexts, to explore insights regarding expressed emotions and associative factors from a niche community.

2.0.1 Appalachian Trail and Long-Distance Hiking. The Appalachian Trail (AT) is a renowned long-distance hiking trail and the most popular of the Triple Crown Trails in the eastern United States, crossing 14 states from Spring Mountain, Georgia, to Katahdin, Maine, over 2198 miles, which receives over 3 million visitors every year [3, 92]. Over 3,000 individuals yearly endeavor to complete long-distance hiking the entire AT from start to end, often for multiple weeks or months [84]. Long-distance hiking demands both mental and physical resilience [47] and involves spiritual, social, and emotional experiences [45, 69]. Long-distance treks across cultural landscapes, like the AT, are highly valued in many societies for their blend of wild natural and deep human values [38].

2.0.2 Trail Stories: Self Narratives and Blogs. Storytellers use culture, context, emotions, and stories' indices like time, location, and individuals entangled in the experiences to retrieve memories and create compelling stories [40, 61, 63, 90]. Similarly, when individuals author blogs to narrate a story, they often share personal experiences, thoughts, feelings, and perspectives [44, 82]. Despite numerous critiques surrounding the use/non-use of technology on the trail [35, 57, 91], many individuals digitally document their long-distance hikes [47]. Through these narratives, they delve into their personal experiences and emotions, often resembling their diaries that capture life's ups and downs on and off the trail [73]. These narratives range from short and long-form videos, keeping traditional text journals on paper or online via blogs and forums, and captioned images posted on social media platforms [47, 75]. Based on prior research, blogs and social media posts have been used in gaining a comprehensive understanding of community perspectives, experiences, issues, and narratives in outdoor and rural computing [47, 64, 74, 75]. Despite the usefulness of user-generated platforms, only a small body of research has focused on eliciting emotions from blogs [31, 49, 52], especially in the outdoor context. To the best of our knowledge, this is the first paper focusing on analyzing LD hiking community blogs and exploring their reflected emotions.

2.0.3 Emotion Recognition in HCI Research. Emotions are triggered by a significant event or stimulus, which is evaluated as relevant to one's attitudes, motivations, experiences, and objectives [33, 42]. Researchers in affective computing have proposed several classifications to categorize the emotions that manifest in everyday experiences [21, 67], from basic to non-basic (complex) emotions [16]. Basic emotions are happiness, sadness, surprise, fear, anger, and disgust [21], and non-basic emotions can be gratitude, loneliness, confusion, etc. [28]. Based on an acclaimed emotion framework outlined by Paul Ekman, basic emotions are grounded in the idea that there is a biological explanation for each of them, allowing for universal categorization [19, 21] and serving as foundational building blocks for understanding and categorizing a broad spectrum of human emotional experiences and social constructionism

[21, 83], and enabling emerging technologies known as 'Emotion AI' [1, 59]. While sentiment analysis determines polarity, such as positive, negative, or neutral sentiments in the text [60], emotion recognition goes beyond by offering deeper insights into the underlying reasons behind the expressed emotions from digital content (e.g., facial expressions, voice patterns, plain texts) [8, 36]. Moreover, various applications of technology focused on emotion research in different threads of HCI discipline such as mental health, user-interface design, and communication media [37, 65, 79, 85, 89]. We add to emotion research by leveraging emotion recognition in the outdoors context, namely LD hiking.

2.0.4 Weather Influences on Emotional States. It is widely believed that weather can influence individuals' emotions [80] and their affective experiences [46]. Prior research reported the influence of various weather factors on individuals' emotional well-being, including temperature, precipitation, wind power, humidity, and sunlight [14, 24]. For instance, the lack of sunlight has been attributed to the cause of Season Affective Disorder [62]. LD hiking is inherently connected with the weather as hikers are on the trail for an extended time during varied weather conditions, between rough terrain and elevation [45], which demands the consideration of weather in hikers' daily patterns. Weather can influence hikers' safety, enjoyment, and overall experience, affecting them physically, mentally, and psychologically [25, 45, 94] when they need to deal with challenges and difficulties posed by adverse weather conditions, often referred to as weather stress for hiking [68]. Despite the inseparable connection between long-distance hiking and weather, limited research examined the links between LD hikers' emotions and weather [94]. This paper aims to fill this gap to some extent.

3 METHODOLOGY

We used an emotion recognition model, leveraging Ekman's theory on basic emotions [21], to identify expressed emotions from collected self-reported data of LD hikers. After data preprocessing, we then applied topic modeling analysis on emotional journal blogs to determine contributing factors to hikers' emotions. Finally, we conducted a one-way ANOVA (F-test) to assess the relationship between weather and emotions [15]. Figure 1 indicates the overview of the methodology.

3.1 Data Collection: "Trail Journals" Website and OpenWeather Platform

Data acquisition of authentic and candid experiences in a large corpus for a unique and niche community, like LD hikers, is challenging for HCI research [30]. The "Trail Journals[1]" website is a platform where backpackers and LD hikers worldwide share reflections, experiences, and their trail updates through journal entries [86]. This medium offers detailed reported hikers' information (e.g., location, trip miles, date, etc.) and insights into the daily realities of trail life, including both its joys and challenges. It is also a valuable resource for mental preparation for many LD hikers [54]. Hereby, it is a rich spatiotemporal data source to understand Appalachian Trail LD hikers' emotions and opinions [72]. For the research's purpose, online journal entries are used to be complemented by available weather

data. The OpenWeather[2] platform provides comprehensive weather information by utilizing location and timestamps. It offers forecasts and key meteorological parameters such as temperature, visibility, cloudiness, precipitation level, humidity, wind speed, atmospheric pressure, and weather descriptions for various locations.

We collected publicly accessible Appalachian Trail journal entries of LD hikers from the "Trail Journals" website, such as journal text, location, and date through Beautiful Soup [3], which is utilized to parse HTML and XML documents. The data spanned 11 years from 2013 to 2023 and included 151750 journal blogs and 2999 users who posted in at least one journal. Additionally, for connecting LD hikers' journal entries with weather data, we transformed their reported location in string format into coordinates using ArcGIS[4] for official AT assets (e.g., rivers, shelters, campsites, etc.). We also manually added coordinates to frequently mentioned locations that couldn't be found in ArcGIS. We specified 76291 unique journals with geo-locations, which were used to obtain weather data through OpenWeather API 3.0. We integrated the weather and hikers' journals datasets for data pre-processing and analysis.

3.2 Data Preprocessing: Data Cleaning, Long-Distance Hikers' Identification, and Ethics

Although the collected data is publicly available, "trail names" may reveal hikers' identities. To address this concern, we utilized the anonymized information in the data corpus for further analysis to protect private information and prevent the association of individuals with stored data. In addition, there is no official definition of long-distance hiking; borrowing from the US codes on national historical trails, long-distance trails are "trails or trail segments which total at least one hundred miles in length," so this study defines long-distance hikers as individuals who walk over 100 miles over a year on the same trail [87]. We identified 1508 long-distance hikers from the data corpus, and we used their data (126604 unique journal entries) for further analysis.

For data cleaning, first, we ensured there were no duplicates for journal blogs. Second, we dealt with inconsistencies in hikers' reported locations regarding typos, incorrect spellings, and locations' abbreviations by utilizing the Fuzzywuzzy library [5] for string matching with locations' official names. Third, we excluded journals that either lacked geo-location data or contained missing values for emotion-weather analysis. For further preprocessing on the unstructured written text in journal blogs, we eliminated non-English journals and broke down lengthy journal documents (The average number of words and sentences are 450 and 31 in order.) into shorter versions by splitting the journal texts into paragraphs, which usually form a thematic unit within two to fifteen sentences (The average number of words and sentences are 128 and 9 in order). Throughout this process, other journal features like location and associated weather data remained unchanged for the corresponding segmented entries, which were then utilized for subsequent text and emotion analysis.

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[1]https://www.trailjournals.com/journals/appalachian_trail

[2]https://openweathermap.org/

[3]https://pypi.org/project/beautifulsoup4/

[4]https://www.arcgis.com/apps/webappviewer/index.html?id=6298c848ba2a490588b7f6d25453e4e0

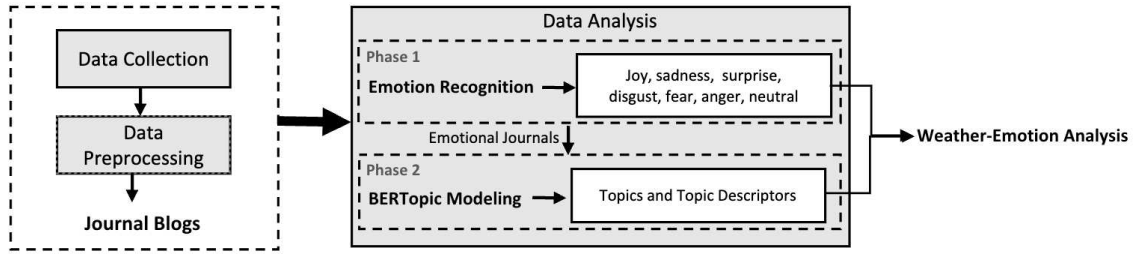[5]https://pypi.org/project/fuzzywuzzy/

Figure 1: Study methodology overview: data collection and preprocessing of journals following with data analysis, including BERTopic modeling and emotion recognition, and weather-emotion analysis.

3.3 Data Analysis: Emotion Recognition and Topic Modeling Analysis

3.3.1 Emotion Recognition. Blog entries may convey a mix of emotions, combining elements of joy, exhaustion, frustration, and awe within a single narrative. To obtain more accurate results and increase the model's performance, we applied the emotion model to each paragraph of journal stories that are thematic units [27]. Accordingly, we used the acclaimed framework outlined by Paul Ekman to categorize the journals into six basic emotions (joy, surprise, anger, disgust, sadness, fear) to interpret the diverse universal array of emotional states that LD hikers encountered during their hike. Hereby, we utilized the Emotion DistilRoBERTa-base model, which is a variant of the DistilRoBERTa-based model fine-tuned specifically to predict Ekman's six basic emotions in English text sourced from social media platforms and self-report datasets [36]. The model predicts basic emotions in the text by assigning probabilities to each emotion class, with the highest score indicating the most likely emotion, capturing context, nuances, and patterns in the journal blogs. A "neutral" prediction implies the text lacks strong emotional cues, possibly being more factual or informational.

3.3.2 Topic Modeling Analysis: BERTopic. We leveraged BERTopic, which is an advanced topic modeling technique in capturing contextual nuances and semantic relationships [29], for the automatic qualitative coding inspired by [30] to extract salient factors contributing to hikers' emotional experiences. To this end, we applied BERTopic modeling analysis on journal segments that were associated with one of six basic emotions. This technique uses BERT embeddings and c-TF-IDF to form dense clusters that make topics easy to understand while preserving key words in the topic descriptions [11, 18]. Our detailed BERTopic modeling process encompasses 1) Using a sentence-transformer model, called "all-MiniLM-L6-v2," to compute semantic embedding vectors, which means capturing the semantic relationships and meanings between words or phrases represented as vectors in a continuous, high-dimensional space; 2) Reducing the embedding vectors' dimensions using Uniform Manifold Approximation and Projection (UMAP) for efficient clustering [5]; 3) Clustering the dimensionality-reduced embedding vectors using HDBSCAN [58] to handle clusters of varying shapes and densities and combine similar journals into larger topics; 4) Performing tokenization by using CountVectorizer to split journals into tokens and get rid of stop words (like "to," "and," etc.); 5) Counting the

frequencies of each topic and its representatives, using class-based TF-IDF score, which is used to rank the words [70].

3.3.3 Statistical Analysis. The statistical method most widely employed for hypothesis testing is ANOVA (Analysis of Variance) [81]. The one-way ANOVA compares the means between independent groups to determine whether there are any statistically significant differences between these groups. In our case, we seek to realize whether different weather conditions link to varied emotional states.

4 FINDINGS

We addressed RQ1 to LD hikers' unmask emotions by listing the top 10 underlying factors to their emotional states and reporting the frequency of basic emotions in their blogs. Subsequently, we addressed RQ2 by identifying weather variables, which are significantly associated with specific emotions in hikers.

4.1 Unmasking Emotions: The Authority of Emotions in Long-distance Hikers' Journals

The trail always provides something for hikers that may meet or exceed their expectations, which cause different emotions (e.g., happiness, anger, uncertain, peace, etc.) among hikers based on various factors like the situation, their personality, culture, and experience level [6, 43]. This raises the question: is long-distance hiking the Appalachian Trail an emotional roller coaster? On aggregate, the emotion model identified 17.23% of journals' pieces as "joy," 10.96% of them as "fear," 9.05% as "surprise," 7.55% as "sadness," 4.03% as "disgust," and 1.12% as "anger." The model couldn't associate parts of 72351 journals from the total with basic emotions, which is around 50.04% of chunks of journal entries. It is partially because hikers talk about their trail progress, logistical facts, gear-related information, etc. [47], which may not represent their emotions in the related parts of journal stories. It can also occur because long-distance hiking can involve complex emotional states like spirituality, simplicity, etc., that extend beyond basic emotions. Overall, the pervasive positive and negative expressed emotions among LD hikers' journal blogs are joy and fear, respectively.

Furthermore, to identify the determinants of emotional experiences for LD hikers, we employed BERTopic modeling analysis on non-neutral journal pieces. The results revealed long-distance hikers mostly articulate about physical challenges, accommodations, trip miles and timelines, weather conditions, spirituality, trail

Table 1: Top 10 Emerging Topics and Topic Descriptors from Long-distance Hikers' Emotional Journal Blogs

Topic	Topic Descriptors
Infrastructure and Accommodation	hike, shelter, walk, camp, water, sleep, tent, hostel, pad, zero
Gear and Physical Challenges	trail, boots, pain, blister, shoe, ankle, knee, climb, cloth, sick
Trail Events and Social Interactions	magic, friend, birthday, happy, celebrate, family, experience, people, great, day
Spirituality and the Trail	faith, spirituality, worship, believe, blessing, verse, pray, grace, praise, yoda
Trip Miles and Timelines	step, walk, stairs, miles, morning, July, October, night, June, month
Weather Conditions	weather, rain, cloud, storm, sunny, wet, fog, temperature, cold, mist
Resupply and Food	delivery, mail, stove, cook, boil, package, canister, ship, weight, water
Trail Landscape and Wildlife	mountain, rock, wonderful, scenic, insect, pond, Damascus, Katahdin, summit, bugs
Human Waste and Water	privy, bathroom, toilet, filter, waste, poop, place, cathole, water, smell
Digital Technologies	phone, battery, Verizon, service, telephone, charge, sprint, Wifi, delay, YouTube

logistics, water, human wastes, social interactions, trail events, digital technologies, resupply, etc., in their emotional journals. Table 1 represents the top 10 salient topics with their 10 most frequent topic descriptors that contribute to hikers' expressed emotions. The findings indicate the weather is a driving factor in LD hikers' emotions; however, it is rarely researched.

4.2 The Power of Weather: Influences of Weather on Long-distance Hikers' Emotional States

Hikers' stories and blogs are usually repleted with instances where emotions and locations are vividly described through the description of the weather, which can affect how they experience the situation, place, or hike [26]. Our findings also indicated weather as an emerging theme that drives hikers' emotional experiences. For instance, a hiker wrote: *"We awoke this morning to cold, blustery weather and cloudy skies that made me frustrated, unlike yesterday's warm sun and cool breeze..."* Moreover, given the prevalence of terms such as cloud (10072 occurrences), temperature (15997 occurrences), rain (61787 occurrences), and humid (17335 occurrences), which are identified as frequent weather descriptors in the BERTopic analysis, we opted to assess how weather parameters, including precipitation level, humidity, cloudiness, and temperature influence the basic emotions have been expressed in the journal blogs by conducting one-way ANOVA (F-test, Table 2). We exclusively included journal entries linked to geo-locations for the statistical analysis, as these entries contained weather data.

Table 2 reports how each weather variable can be linked to different emotions. In summary, our findings indicate that anger, disgust, and joy are significantly linked to the amount of rainfall (F=5.8, 3.9, and 6.2, respectively, and p<0.05), with anger and disgust being particularly associated with higher rainfall levels (>0.19 inches) and joy related to lightweight rain (<0.1 inches). We do not observe a relationship between rainfall and emotions of sadness, surprise, or fear. Furthermore, temperature is linked to joy and fear emotions (F=4.07 and 3.9 respectively, p<0.05), with fear being linked to low temperature (<40°F) and joy being associated with cool temperature (>50°F and <65°F). In addition, humidity is linked to fear emotion

(F=6.7 and p<0.05), with a notable connection to higher humidity levels (>70%). The results revealed no significant relationship between emotions and cloudiness. Based on these findings, joy and fear experienced by hikers are more frequently linked to weather compared to other emotions.

5 DISCUSSION

We aimed to understand the general emotional states of LD hikers on AT and what contributes to these emotions. This section outlines how HCI researchers can utilize blogs to gain insights into communities. It also discusses how emotion-weather relationships can be different for the LD hikers' community and benefit future design.

5.1 Leveraging Blogs to Understand Community Emotions, Opinions, and Experiences

Incorporating digital technologies, particularly social media and online platforms, into the hiking community shapes LD hikers' wilderness experiences [38] and creates a space for information exchange and experience sharing [47, 48, 75]. This interaction equips researchers with rich firsthand large-scale data from the community, including individuals' opinions, emotions, and experiences [66, 76]. Our approach identified a way to look at blogs, in our case hikers' blogs, self-reflection stories [32], and recognize emotions while making arguments that emotions in the blogs correspond with factors that they are writing about, aligning with previous studies [10, 52, 78]. Our method can extend to other weblogs or microblogs from social media platforms to understand communities' emotional experiences, considering guidelines for evaluating and reducing risks in emotion recognition applications [37].

Although we provided insights about LD hikers on the Appalachian Trail and focused on the association between weather and hikers' emotions in this paper, an understanding of all the factors, like social connections, is essential to understanding the community and exploring what matters to them during their emotional experience. Moreover, our findings revealed emotions are naturally woven into LD hikers' narratives. For instance, hikers expressed their joy in facing wild and natural beauties, receiving supportive

Table 2: This table reports the results of associations between six basic emotions and weather variables; F is the F-test, and p is the p-value. p<0.05 shows a significant relationship between a weather variable and emotion. For example, precipitation on the trail is linked to long-distance hikers' experiences of joy, disgust, and anger.

Emotion	Precipitation Volume (inch) F, p	Temperature (°F) F, p	Cloudiness (%) F, p	Humidity (%) F, p
Joy	6.2, 0.01*	4.07, 0.04*	0.2, 0.6	1.4, 0.2
Sadness	1.3, 0.2	0.7, 0.1	0.5, 0.4	0.5, 0.4
Surprise	0.13, 0.7	1.7, 0.1	0.5, 0.4	0.1, 0.7
Fear	1.3, 0.2	3.9, 0.04*	0.1, 0.7	6.7, 0.009*
Disgust	3.9, 0.04*	0.4, 0.4	0.05, 0.8	2.4, 0.1
Anger	5.8, 0.01*	0.7, 0.3	3.8, 0.07	0.04, 0.8

*stat. significant, $\alpha = 0.05$

actions called "Trail Magic," gathering at trail events, etc., Or when hikers conveyed their fear when facing injuries or physical issues on the trail, inclement weather conditions, etc. Since hikers' blogs serve as information and inspiration sources [72], this piggybacking of emotions in their stories impacts the hiking community and needs additional exploration, as emotions can be transmitted in online media [49]. In general, studying community blogs provides an opportunity for researchers and designers to grasp the niches, emotions, and opinions of the community members; however, following ethical considerations while collecting and analyzing the data is vital to protect the narrators' rights.

5.2 Emotion-Weather Relations on Hikers' Trail Life

Emotional states and moods play a critical role in hikers' adventurous journeys in the outdoors, which direct their attention and reflections on the environment, framing their attitudes [22] and even making social interactions [13]. Our findings also revealed that LD hikers experienced an emotional journey that encompasses positive and negative emotions over their extensive period on the trail because of different reasons like weather, infrastructure conditions, trail events, etc. Considering weather influences, according to table 2, weather variables like precipitation, temperature, and humidity were significantly linked to some basic emotions. For instance, hikers experience fear under extremely humid and hot weather due to the potential risks of dehydration, heat exhaustion, and stroke or during freezing weather because of lack of water due to the freezing water sources.

Although prior studies argued cold weather drives safety hazards, winter depression [62], seasonal affective disorder (SAD) [55], or physical pain for some people, individuals' personalities and demographics can affect the association between weather variables and affective experiences [14]. Within the hiking community, some hikers find walking and hiking in cold weather as a spiritual self-care activity that helps them reduce stress, find a sense of peace, and avoid crowds [71]. On the other hand, prior research noted hikers' moods are influenced by change or lack of change in the weather, even more than the direct impact of the weather itself [26], which necessitates more research in emotion and weather association for LD hikers. It highlights the importance of emotional preparation for LD hikers, who spend several weeks or months on

the trail, and other trail stakeholders who interact with them. The findings of this study can be insightful for other outdoor communities and sports tourism regarding how weather affects individuals' emotional experiences and how organizations should deal with it to provide a better experience/support for their community members.

6 CONCLUSION AND FUTURE WORK

In our emotion research on LD hikers' journals, we presented how utilizing community blogs enables disclosing members' emotional states and the top ten underlying factors driving these emotions using emotion recognition and topic modeling analysis. The findings indicated joy and fear are the pervasive expressed basic emotions in hikers' blogs and showed how weather, an inseparable component of outdoor activities, can affect hikers' basic emotions. It is essential to acknowledge that the emotions experienced by LD hikers may be different from what they expressed in blogs and may extend beyond basic ones, like feeling spirituality, loneliness, excitement, and curiosity. This paper focused on identifying basic emotions as they are universal and less dependent on the subjective experience.

For future work, we aim to delve into other influential factors in LD hikers' emotional experience, like social interactions and trail events. Our goal is to gain a comprehensive understanding of the socio-emotional aspects of the long-distance hiking experience, leading to providing timely support within the LD hiking community that can benefit the trail management practices, hikers, and HCI researchers who focus on the outdoors. For instance, the empirical findings of emotion-weather research can benefit future design in terms of improving trail-related services like trail magic planning, enhancing hikers' preparedness and resilience, enriching hostel owners' services, and fostering convenient social connectivity.

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