

# 第一页

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Good afternoon guys. We are group Pangolin. I'm Beichen Zhang from the School of Natural Resources. Yinglu & Bin. Both of our two initial project ideas are under a same topic that is deep-learning based natural disasters monitoring from online media.

## 第二页 Contents

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We will first introduce the general background and justification of our two idea. Following by the detailed information of two proposed projects. First one is natural language processing with disaster tweets, the other one is classification of drought impact based on media reports from dir.

## 第三页 图

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Natural disasters are not far from us. Actually, we just experienced a severe flooding in 2019 because ice smashed through the Spencer dam. The flooding event caused millions dollars damage in Nebraska. Some other common disaster such as wildfire, drought, earthquake, and hurricane.

## 第四页 图

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In 2020, there were 22 weather/climate disaster events with losses exceeding \$1 billion each to affect the United States. These events included 1 drought event, 13 severe storm events, 7 tropical cyclone events, and 1 wildfire event. Overall, these events resulted in the deaths of 262 people and had significant economic effects on the areas impacted. The 1980–2020 annual average is 7.0 events (CPI-adjusted); the annual average for the most recent 5 years (2016–2020) is 16.2 events (CPI-adjusted).

## 第五页 风险管理

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To prevent and address the damage from the natural disasters, a pratical system on society and community has been developed that is risk trinity. The risk trinity can be described as built up by the three pillars of risk assessment, risk management, and risk communication assembled under one roof, a "risk trinity,".

Specifically, on the aspect of the risk management, a risk management cycle with causal relationships and directions is on the right side figure. The United States of America's Emergency Management Agency (FEMA) has set up a "Natural Disaster Risk Management Cycle" that comprehensively describes the different steps of disaster management from the disaster onset to the preparation for the next (FEMA 2003). The Natural Disaster Risk Management Cycle with the onset of a disaster and clockwise follows all the steps of disaster risk management. on the right there are activities that describe the response to a disaster event and on the left activities are placed that describe the future-oriented disaster prevention. The steps on the right side, Crisis Reaction and Rehabilitation are both

post-incident steps and start upon the disaster impact. The two steps of Preparedness and Mitigation form preventive actions to avoid the negative impact of future disasters. National Institute of Building Sciences (NIBS) 2016: every 1 dollar spent on hazard mitigation can save nation \$6 in future disaster costs

## 第六页 在线媒体

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As the mobile devices became popular, the amount of online media data is counted in PB every day. Thus, we will employ the online media as our primary data source. However, compared to other type of data, natural language is the majority part. So will focus on natural language processing in the two proposed ideas.