Motivation

- Cyber-Physical Systems: richly heterogeneous devices (mobile devices, home electronics, taxis, robotic drones, etc.) that together gather sensor data, analyze it, and coordinate large-scale actions in response to it.
- Challenge: How to program CP Systems?

Related Work

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Approach

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Implementation

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Dataset Overview

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Sentiment Analysis vs. N-gram

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Applications and Future Work

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References

- [1] Liu, Bing, and Lei Zhang. 2012. A survey of opinion mining and sentiment analysis. In Mining text data., 415Springer US.
- [2] Godbole, Namrata, Manja Srinivasaiah, and Steven Skiena. 2007. Large-scale sentiment analysis for news and blogs. Icwsm 7 (21): 219-22.
- [3] Hutto, C.J. & Gilbert, E.E. (2014). VADER: A Parsimonious Rule-based Model for Sentiment Analysis of Social Media Text. Eighth International Conference on Weblogs and Social Media (ICWSM-14). Ann Arbor, MI, June 2014.
- [4] Jean-Baptiste Michel*, Yuan Kui Shen, Aviva Presser Aiden, Adrian Veres, Matthew K. Gray, William Brockman, The Google Books Team, Joseph P. Pickett, Dale Hoiberg, Dan Clancy, Peter Norvig, Jon Orwant, Steven Pinker, Martin A. Nowak, and Erez Lieberman Aiden*. Quantitative Analysis of Culture Using Millions of Digitized Books. Science (Published online ahead of print: 12/16/2010)
- [5] Reisman, Dillon. . All the News That's Fit to Change: Insights into a Corpus of 2.5 Million News Headlines, Edited by Joel Reidenberg. Princeton University: Center for Information Technology Policy, 2016.