**Problem and Contributions**
- Cyberbullying is the use of online digital media to communicate false, embarrassing, or hostile information about another person.
- It is the most common online risk for adolescents and well over half of young people do not tell their parents when it occurs.
- There have been many studies about the nature and prevalence of cyberbullying.
- Relatively less work in the area of automated identification of cyberbullying.
- The focus of our work is to develop an automated model to identify and measure the degree of cyberbullying in social networking sites.
- We present the design of a model for identifying cyberbullying that builds on previous research findings in the areas of traditional bullying and cyberbullying in adolescents.
- We also identify challenges and opportunities to integrate the latest results from psychology and social network data analysis to address a problem of great social impact.

**Design**
- BullyBlocker analyzes adolescents’ interactions with their social network to identify:
  - Warning signs: e.g., number of insulting messages and embarrassing pictures.
  - States of vulnerability: e.g., newcomers, age-gender group, members of minority groups, people with disabilities, etc.
  - The integration of these factors is guided by previous research results in psychology.
- Bullying Rank: Estimates the probability of a minor experiencing cyberbullying.
- The computed Bullying Rank is returned to the parent or guardian of the minor.
- The Bullying Rank is divided into three normalized levels of risk intensity: Low[0-33], Medium[34-66], High[67-100]

**Risk Factors**
- Bullying Rank (BR) [0-100]
  \[ BR = 75 \times WS + 25 \times VF \]
- Warning Signs (WS) [0-1]
  \[ WS = (DWIC \times 1.6) + (NSF \times 1.6) + 10 \]
- Vulnerability Factors (VF) [0-1]
  \[ VF = NSF \times 33 + NNF \times 33 + AGF \times 33 \]
- New Neighborhood Factor (NNF) [0-1]
  \[ NNF = 1 - \frac{DNNT}{DNSDT \times 4} \]
- New School Factor (NSF) [0-1]
  \[ NSF = 1 - \frac{DNSDT}{DNSDT \times 4} \]
- Days Since New Neighborhood (DNNT)
- Days Since New School (DNS)
- Days Since New School (DNSDT)
- Age and Gender Factor (AGF) [0-1]
- Days Since New Neighborhood (DNNT)
- Days Since New School (DNS)
- Days Since New School (DNSDT)

**Architecture**
- **Facebook Graph API**
- **Data Collection Module**
- **Cyberbullying Identification Module**
- **Resource Generator**
- **Permanent Storage**
- **Parent Feedback**
- **Bullying Rank Learning Module**
- **Notification (Bullying rank, stats, resources)**

**Publications**