

# Can Machine Learning Create an Advocate for Foster Youth?

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## ABSTRACT

Statistics are bleak for youth aging out of the United States foster care system. They are often left with few resources, are likely to experience homelessness, and are at increased risk of incarceration and exploitation. The Think of Us platform is a service for foster youth and their advocates to create personalized goals and access curated content specific to aging out of the foster care system. In this paper, we propose the use of a machine learning algorithm within the Think of Us platform to better serve youth transitioning to life outside of foster care. The algorithm collects and collates publicly available figures and data to inform caseworkers and other mentors chosen by the youth on how to best assist foster youth. It can then provide valuable resources for the youth and their advocates targeted directly towards their specific needs. Finally, we examine machine learning as a support system and aid for caseworkers to buttress and protect vulnerable young adults during their transition to adulthood.

## 1. INTRODUCTION

The foster care system is the last lifeline for the nation's most vulnerable young people. Most children or teens entering foster care do so due to neglect, physical abuse, parental substance abuse, or a care taker's inability to provide for them. Currently, there are about 428,000 children in foster care across the United States [8]. Each year, around 25,000 to 30,000 of these young people will age out of the system without permanent families [8].

Upon exit from the foster care system without a family or support network, youth face a higher risk of homelessness, exploitation, teen pregnancy, and incarceration. The American Journal of Public Health indicates that 31-46% of youth aging out of the foster system will become homeless by the age of 26 [3]. In a University of Chicago study from 2011, more than 40% of former foster males tracked in Iowa, Illinois, and Wisconsin, reported being incarcerated, compared to 10% in the population of young adults at large in those states [2]. Overall,

foster youth were nearly six times more likely to report being convicted of a crime as an adult while in foster care than the rest of their cohort [2]. Females in foster care who had been arrested were also more likely to have been pregnant than those foster youths who had never been arrested [6]. In general, by age 19, regardless of history of maltreatment, religious faith, or academic performance, 55% of females in foster care had been pregnant at some point [6].

Foster youth without a permanent home are also exceptionally vulnerable to sex trafficking. The National Center for Missing and Exploited Children estimates that six out of ten children involved in child sex trafficking have been in foster care [5].

Most states use a joint program called the Statewide Automated Child Welfare Information System (SACWIS) and the Tribal Automated Child Welfare Information System (TACWIS) to organize caseworker caseloads [7]. Though intended for tracking data on foster youth to better assist them, it has caused late payments to foster families, and can cause complications for states during self-audits, unnecessarily increasing the need for federal oversight. Many caseworkers say they find themselves spending more time at the computer and less time assisting and protecting youth under their care [4]. Machine learning has the potential to streamline the process of navigating these systems for caseworkers, and to help youth better advocate for themselves and their needs while transitioning out of the foster care system.

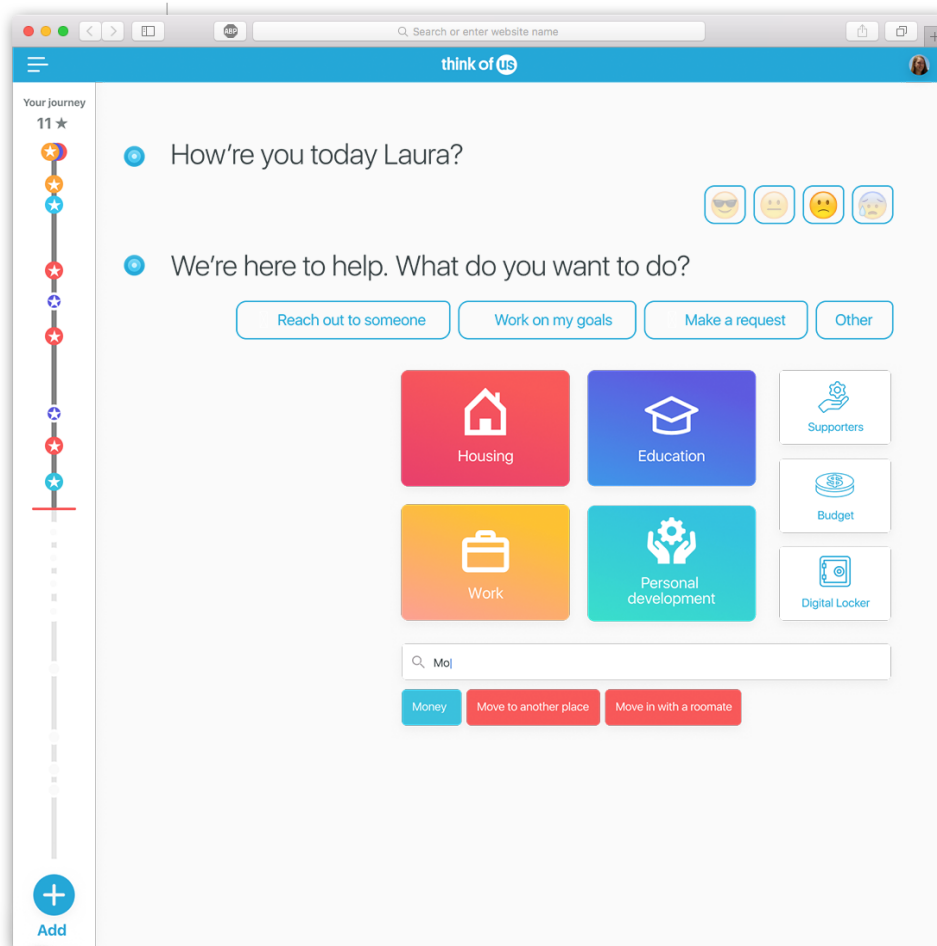
## 2. THE THINK OF US PLATFORM

Upon logging on to the Think of Us Platform, youth are welcomed by a conversational interface (Figure 1) that enables the user to create personalized goals that will advance them on the path to adulthood. The goals fall into categories labeled “Domains of Life”, including plans for housing, education, employment, and their personal lives.

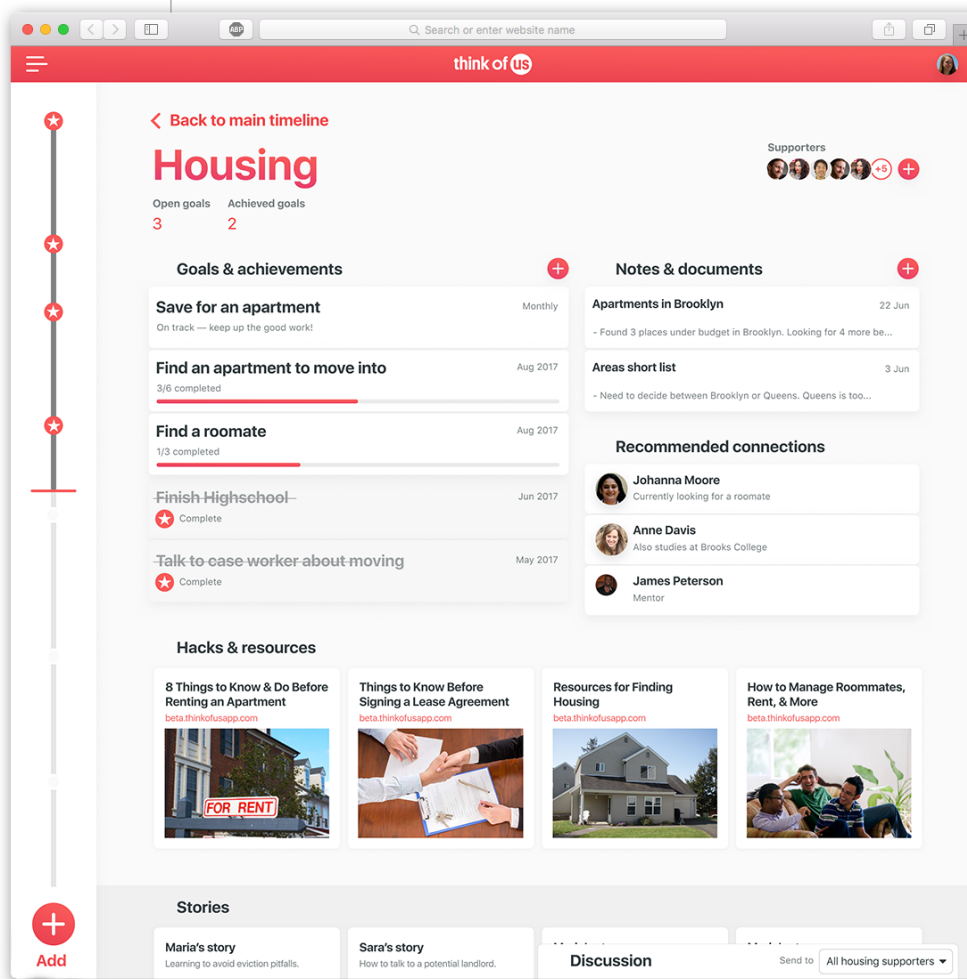
Users can keep track of these goals by an ever present sidebar that acts as both a progress bar, and a map on how far they have until they achieve their stated goals. They are able to advance progress towards their goals by completing action steps, and are encouraged to get assistance from their self-selected advisory board of supportive adults. This advisory board consists of caseworkers, teachers, coaches, mentors, family members and friends chosen by the user, and also helps youth build a support network for themselves. The application also features curated content that is applicable to the user's chosen goals. For example, the ‘Housing Domain’ content (Figure 2) is selected to be relevant to the user’s current goals and specifically tailored to the needs of foster youth.

Youth are also able to contact their caseworkers directly through the platform by initiating a contact request. Additionally, the goals youth set can be shared with caseworkers to help them create a Transition Independent Living Plan (TILP), which is required by the state for youth exiting the foster system. The platform allows youth to continuously edit their TILP without the need for an in-person appointment with

the caseworker, attorney, or deputy probation officer. Without the platform, a youth would have to go to one of those figures to update their TILP in person, who would then input these data in SACWIS and TACWIS at a later time, delaying the updates to the TILP and increasing administrative strain on the system.



**Figure 1:** The conversational interface of the Think of Us Platform Home screen.



**Figure 2:** The application offer a youth a variety of machine learning selected resources to assist them in achieving their goal

### 3. MACHINE LEARNING

Machine learning drives the functions of the Think of Us application. The platform first identifies if the youth appears to be in an untenable situation (e.g. in danger, homeless, camping, or “couch surfing” during account creation), then goals are recommended as next steps to transition into a more stable living situation. This function of the algorithm is determined by how youth with similar needs in the application have eased their transitions into adulthood.

When a user creates a goal, the application examines it and chooses relevant content in the form of videos and guides anticipated to assist and encourage the youth to achieve that goal. Supportive adults also receive emails and system notifications with suggestions and information on how to assist with a youth’s goal. If added to the goal as a designated supporter, the system provides the supporter access to the information necessary to properly assist the youth user, including guides and resources.

If a supporter has had a substantial influence in helping a youth with their

goals, the platform may recommend this supporter to the youth for similar goals. The platform can also send email prompts to caseworkers with updates on the youth's progress, and recommend ways the caseworker might assist with the youth's goals. It can also determine if a youth within their caseload is receiving insufficient attention and support, and then prompt the caseworker to look into the situation. Additionally, if the system identifies language and interactions that indicate that the youth appears to be in need of emergency assistance, but has not used the request feature, the platform can alert the caseworker to examine their situation and suggest a course of action appropriate to that specific youth.

## **4. CONCLUSION**

A foster youth in crisis needs support and a clear set of steps to help them achieve stability and safety. Caseworkers are often overtaxed, especially by paperwork and navigating tedious information systems. Many foster youth feel they lack support from their community and are in search of ways to become better advocates for themselves. We propose the Think of Us platform and its machine learning capabilities as a way for foster youth to effectively establish goals, consider who could provide support on a specific goal, build a support network, and make efficient contact with their caseworker. With the data we have collected from current youth and alumni of the foster care system, we are employing machine

learning to aid foster youth in recommending goals, contacting supporters and caseworkers, and getting the youth into a stable living situation, especially during crisis. Machine learning allows the application to grow and evolve to better serve the needs of foster youth aging out and preparing to age out of the foster care system. The Think Of Us application is now being piloted in the foster care systems in the state of Nebraska and Santa Clara County, California, and feedback from real-life implementation will be used to further improve the application so that foster youth and their advocates can create clear, effective plans when transitioning into adulthood.

## **5. ACKNOWLEDGEMENTS**

We thank the foster youth, foster alumni and caseworkers who have offered their stories and contributed to the beginning of Think of Us Platform database. We also thank Sixto Cancel for his vision and support in the addition of machine learning to the Think of Us Platform, and Daniel Torraca and Golden Arm for their design work on the Platform.

## 6. REFERENCES

- [1] Cohn, Sara, and Rachel Kelly. Information Packet: Foster Youth Attending College. Report. Nation Center for Child Welfare Excellence, Silberman School of Social Work. 2015.
- [2] Courtney, Mark E., Amy Dworsky, Adam Brown, Colleen Cary, Kara Love, and Vanessa Vorhies. Midwest Evaluation of the Adult Functioning of Former Foster Youth: Outcomes at Age 26. Report. Chapin Hall, University of Chicago. 2011. 9.
- [3] Dworsky, Amy, Laura Napolitano, and Mark Courtney. "Homelessness During the Transition From Foster Care to Adulthood." *American Journal of Public Health* 103, no. S2 (2013). doi:10.2105/ajph.2013.301455.
- [4] Egan, Paul. "Computer problems plaguing child welfare system." *Detroit Free Press*. January 11, 2015. Accessed June 08, 2017. <http://www.freep.com/story/news/politics/2015/01/11/problems-plague-state-child-welfare-computer-system/21561025/>.
- [5] McMillion, Rhonda. 2014. "Answering the Alarm." *ABA Journal*, 08, 66-67. <https://search-proquest-com.proxy.library.vcu.edu/docview/155270118?accountid=14780>.
- [6] Oshima, Karen M. Matta, Sarah Carter Narendorf, and J. Curtis Mcmillen. "Pregnancy risk among older youth transitioning out of foster care." *Children and Youth Services Review* 35, no. 10 (2013): 1760-765. doi:10.1016/j.childyouth.2013.08.001.
- [7] "SACWIS/TACWIS Information." US Department of Health and Human Services. Accessed June 8, 2017. <https://www.acf.hhs.gov/cb/research-data-technology/state-tribal-info-systems/managers>.
- [8] The AFCARS Report. Report no. 23. Administration for Children and Families, Administration on Children Youth and Families, Children's Bureau, U.S. Department of Health and Human Services.
- [9] "Transition Independent Living Plan (TILP)." *Know Before You Go*. May 31, 2017. Accessed June 08, 2017. <http://knowb4ugo.org/transition-independent-living-plan-tilp>.