



The Trevor Project: Building AI to Support LGBTQ Youth

Presenters:
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Taki Hasegawa

(she/they)

- Senior Machine Learning Engineer
- Role: Align with stakeholders on AI/ML ideas, research and prototype, operationalize products
- Previously: Machine Learning Engineer @ Mercedes-Benz Research
- Why Trevor: Important mission, empathetic culture
- What makes you smile: snowboarding, Simon (my cat), playing video games!

< Content warning >
This presentation mentions suicide
and mental health topics.

Introduction to The Trevor Project

Mission, Impact and Technology

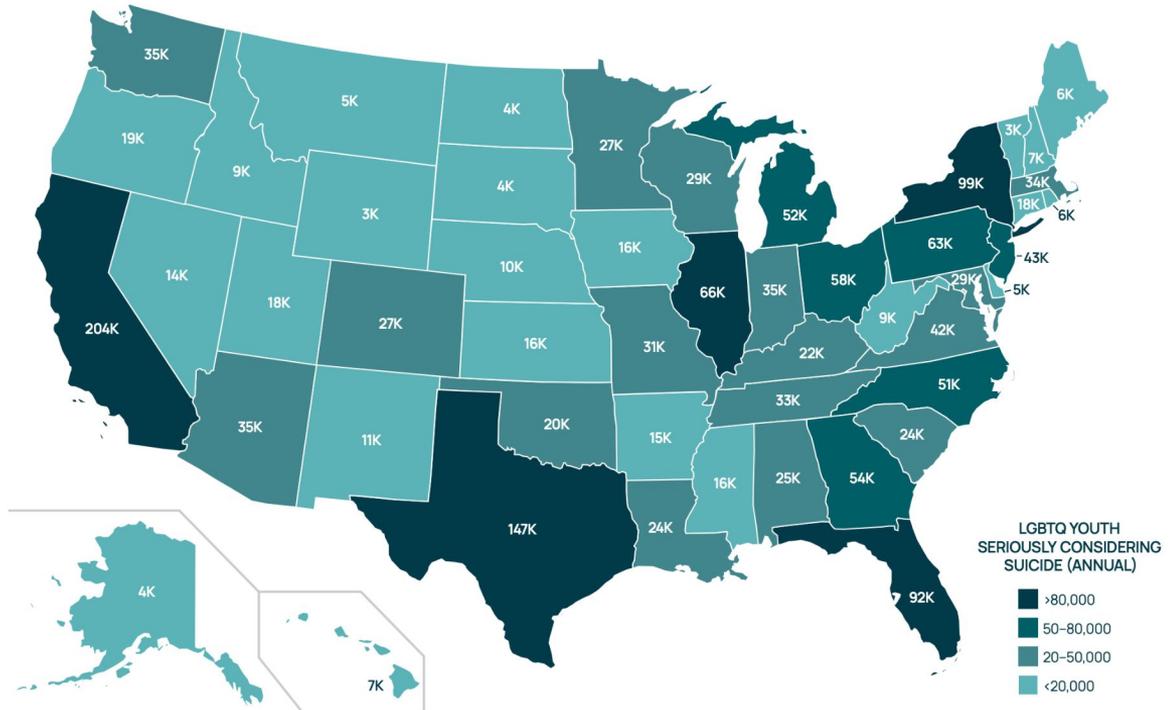


The Trevor Project is the world's largest
suicide prevention and crisis intervention
organization for LGBTQ young people.

Our mission is to end LGBTQ youth suicide —
and it is urgent.

Our research shows that there are an estimated

1.8 million LGBTQ youth
who seriously consider suicide each year





Crisis services

Direct suicide prevention and crisis intervention services to support LGBTQ youth 24/7 via phone, text, and chat



Peer support

The world's largest safe space social networking community for LGBTQ youth



Research

Evaluations and external research that support The Trevor Project in significantly improving its services while maintaining preeminence in scientific inquiry



Education and public awareness

Programs, trainings, and content promoting awareness around issues and policies relevant to LGBTQ youth and the adults who support them



Advocacy

Advocacy at the federal, state, and local levels to fight for policies and laws that protect LGBTQ youth

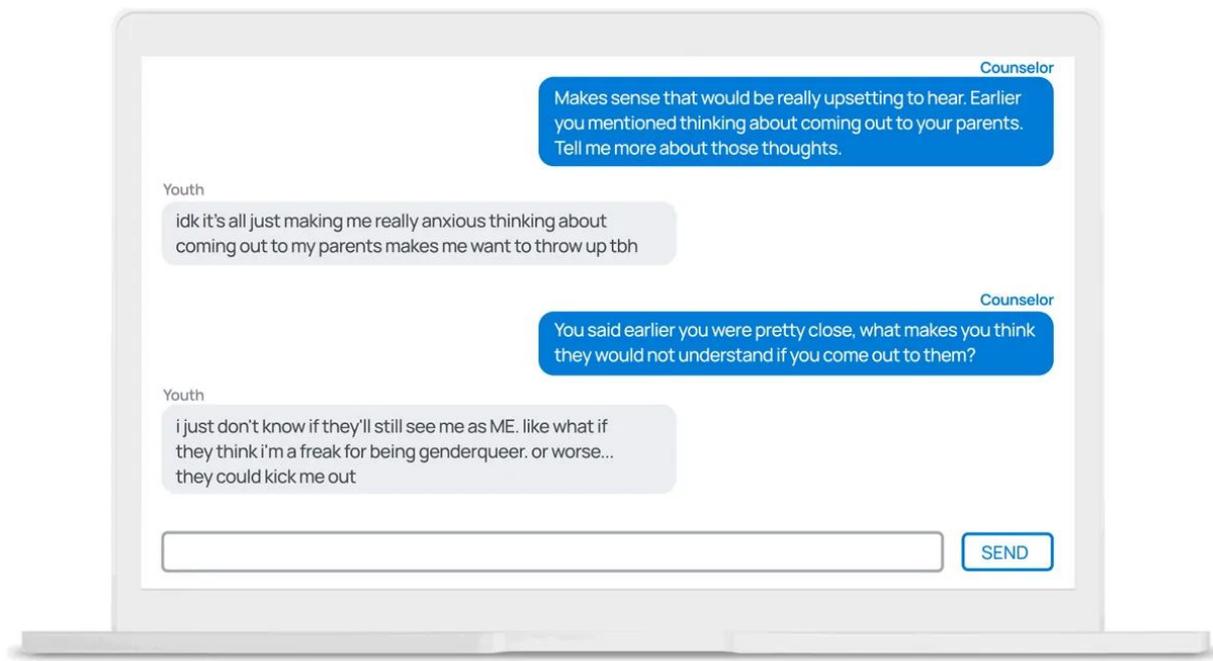
Building AI at Trevor: A Narrative

The Crisis Contact Simulator and Beyond

Problem Space: **Training**

Volunteers go through a 40-hour virtual training over 10 weeks that covers counseling skills, LGBTQ identity, the structure of a conversation on our crisis services.

The Crisis Contact Simulator (CCS) is an AI chatbot designed to act like an LGBTQ youth in crisis.

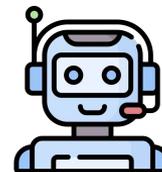


CCS allows aspiring counselors to experience realistic practice conversations called role-plays.

Each trainee completes at least 4 role-plays, which were previously all human-led.



2 role-plays are now conducted with CCS



The Trevor Project used to train roughly 30 new counselors each quarter



With the help of CCS and other key initiatives, our team now trains over 200 counselors each month.



For human-led roleplays, trainees must schedule a time with a coordinator.



With CCS, trainees can complete the role-play on their own time.



The Evolution of CCS

From Prototype to Product

Chatbots are largely evaluated on their sensibility and specificity

Sensibility: Does the chatbot's response make sense in context?

Specificity: Does the chatbot avoid vague answers?

Example: How are you doing today?

Sensible and Specific

Human: How are you doing today?

Chatbot: I'm doing well! I had a nice weekend.

Not Sensible, but Specific

Human: How are you doing today?

Chatbot: My name is Wendy

Sensible, but not Specific

Human: How are you doing today?

Chatbot: I don't know...

Model Architecture
[early candidate]

Counselor: What's going on?

Youth: i think i'm very gay

Youth: i think and like like like like like like and

Model Architecture

GPT-2

Model Creator

OpenAI

Model Iteration



Youth: thank you so much your friend meh used to have actually, he even picked me up when i was that way and came out to my parents and put me in a trash chanel

Youth: bag for the night and began, shit, dating him at the library cause everyone saw him as that guy and he had ties with two of the people i

Youth: d like that

Youth: im literally so f***** dumb

Youth: and he'll send me something with the logo of art bullshit memes in it and it literally reminds me of him

Counselor: Thank you for reaching out to [PERSON_NAME] for support and for sharing all this with me. I'm so glad you did reach out today. I'm here to listen and talk through anything you have going on. What name can I call you while we chat?

Youth: jake is fine

Counselor: Nice to meet you, [PERSON_NAME]. How old are you?

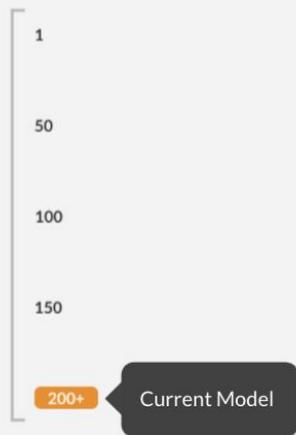
Model Architecture

GPT-2

Model Creator

OpenAI

Model Iteration



Counselor: Hi welcome to TrevorChat. My name is Alex. What's going on?

Youth: idk I guess i've just been feeling depressed lately. I'm feeling really down and anxious about thing

Counselor: Thank you for sharing that with me. It sounds like you are having a difficult time. Before we start, what name can I call you today?

Youth: riley

Counselor: Thanks Riley. Nice to meet you. How old are you?

Youth: 16

Counselor: Thank you for letting me know. What city and state are you chatting from?

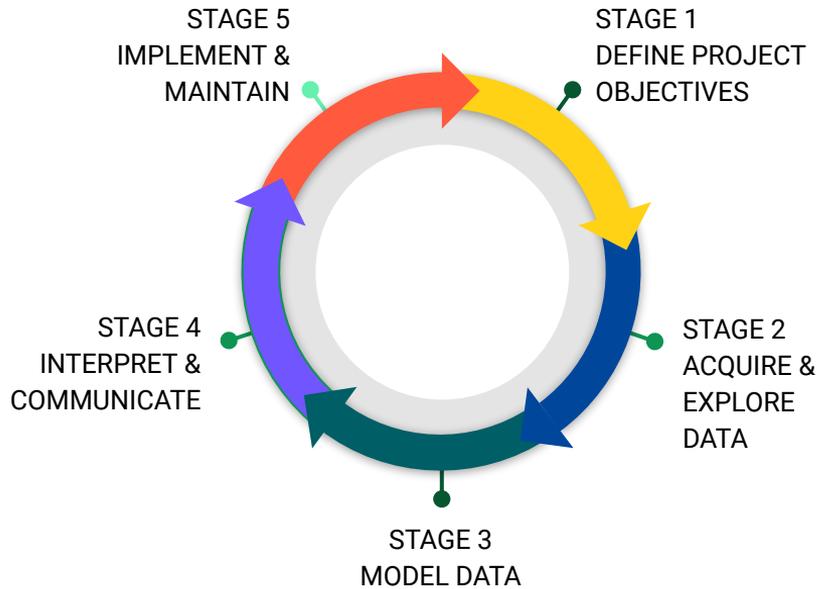
Youth: asheville, NC

Key Learnings from CCS

What makes projects like CCS successful?

Learning #1: Let the AI/ML Project Lifecycle guide but not define

Ideally....



Let the AI/ML Project Lifecycle guide but not define

Realistically...

Step 1 Acquire data over time

Step 2 Create initial prototype

Step 3 Define project objectives

Step 4 Iterate and improve prototype

Step 5 Interpret and communicate results

Step 6 Iterate further while building software

Step 7 Align on go-ahead for model

Step 8 Launch product



Lather,
Rinse, and
Repeat

From the last slide...

STAGE 1: DEFINE PROJECT OBJECTIVES

STAGE 2: ACQUIRE & EXPLORE DATA

STAGE 3: MODEL DATA

STAGE 4: INTERPRET & COMMUNICATE

STAGE 5: IMPLEMENT & MAINTAIN

Learning #2: Involve cross-functional discussions early

What can AI/ML do?

- ✓ Automate or streamline human processes that are labor-intensive
- ✓ Discover trends and patterns
- ✓ Extract meaning from language

What benefits does AI/ML have?

- ✓ Facilitates the scaling / expansion of operations
- ✓ Simplifies complex operational workflows
- ✓ Standalone processes provide flexible time schedules
- ✓ Automatic operations have quick response times

However, thinking more concretely about AI/ML can get complex...

Concrete tasks that AI/ML can do with text data

Named Entity
Recognition (NER)

Semantic
Embedding

Linguistic
Diversity

Dependency Parsing

Chatbot

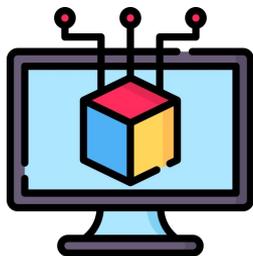
Classification +
Regression

Topic Clustering

Part-of-speech
tagging

...and more!

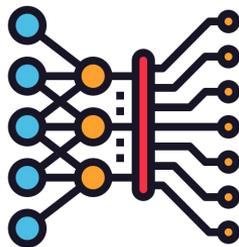
In addition, AI/ML projects require
a broad range of expertise



Software
Engineering



Product
Management



AI/ML
Engineering



UX Research



Subject Matter
Expertise

Thus, early discussions amongst
cross-functional team members are necessary

Learning #3: Monitor your product, obtain feedback, and act accordingly



Logging: Current CCS logging system records inputs, outputs, and metadata for CCS



User Feedback: Trainees complete a post-chat survey after every CCS role-play



User Research: UX Research interprets survey results and conducts interviews



Improvement Scoping: Product analyzes information and determines path forward

Example: An early version of CCS occasionally responded with repeated phrases.



Logging: Logging system recorded cases in which repetitions were likely to occur



User Feedback: Post-chat survey identified trainees that were impacted



User Research: UX Research further assessed the impact



Improvement Scoping: Product worked with AI/ML experts to identify a fix and determined go/no-go

Learning #4: Think ethically

“We believe in technology enabling our work, but it does not replace our work. That person-to-person connection for people in crisis is critical. It’s the core of what we do. The way that we are using technology is to help facilitate that.”

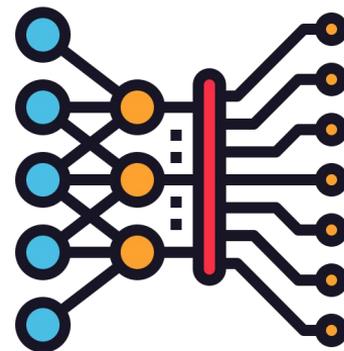
Area	Considerations	Avoid
Datasets & Training	<ul style="list-style-type: none"> ✓ Consider the size and source of your data ✓ Ensure privacy through removing Personally Identifiable Information (PII) ✓ Identify what biases, skews or mistakes are built-in ✓ Determine how the data can be improved 	<ul style="list-style-type: none"> × Using data that is not understood or analyzed
Evaluation	<ul style="list-style-type: none"> ✓ Define intersectional groups that could be at a disadvantage ✓ Define intersectional groups that may have an advantage ✓ Examine your success criteria/metrics among these groups 	<ul style="list-style-type: none"> × Evaluating based on a single dimension, if possible
Feedback & Collaboration	<ul style="list-style-type: none"> ✓ Bring a diverse group of people together to develop and review model ✓ Implement a feedback loop 	<ul style="list-style-type: none"> × Developing or making decisions without domain experts
Evolution	<ul style="list-style-type: none"> ✓ Adjust as you learn more about the people you serve, technology, and other approaches 	<ul style="list-style-type: none"> × Remaining static in the approach

What's next?

The future of AI @ The Trevor Project

Strategic Vision

- + Significantly grow the number of crisis contacts served
- + Build on The Trevor Project's history of quality and inclusivity to be the most effective and welcoming support for every LGBTQ young person
- + Lay the foundation for continued growth to support LGBTQ youth across the U.S. and abroad



Feel free to connect!



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