Building a Sextbot: botrotica

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Abstract

In this paper, I reflect on the development and deployment botrotica—a situated, site-specific art installation and coding machine learning experiment for public interaction. The system, botrotica is a sextbot—a chat bot that is inspired by the explicit messages that we send to each other. This sextbot is an exploration in sexting developed for futuresmut, the 10th annual Smut Cabaret at Nextfest 2017, an emerging artist festival in Edmonton, Alberta, Canada. This project serves as a case study on the incorporation of machine learning technology in interactive multimedia art installations.

1 How did we get here?

The Internet enables us to explore our identities and develop ourselves through social communication. New technologies continue to change the way we interact with one another. How do we share ourselves publicly and privately? Who do we share ourselves with and what exactly are we sharing? We create ourselves by how we interact with each other, and as Marshall McLuhan would say, “the medium is the message [9]”. Modern artists often remind us of how these systems developed to connect us can drive us apart, transforming social media into antisocial forces [3]. Thoughts, ideas, pictures, sounds, and videos can be exchanged publicly and privately with passion partners. Sexting—the portmanteau of sex and texting added to the Merriam-Webster’s Collegiate Dictionary in August 2012—is the sending of sexually explicit messages or images by cell phone. The popularization of this technology has led to the emergence of a field of psycho-social research. Rather than increasing intimacy in these types of relationships, sexting may act as a buffer for physical intimacy and may be associated with risky behaviour in teens and young adults [1, 2]. Sexting has also been linked to sexual objectification [4]. This artistic installation uses botrotica to challenge questions of sexual communication, objectification, instigation, and artificial companionship. This work is inspired by the work of Sherry Turkle in “Alone Together” [10], and software: My Virtual Boyfriend [6] and SELF [5].

2 What is botrotica?

botrotica is a disembodied site-specific installation. It is situated abstractly behind a phone number. Willing and consensual participants only need access to a mobile phone for interaction. This interactive cyber-installation piece was turned-on for the duration of the futuresmut cabaret evening event. When participants texted the number they engaged the sextbot in a back-and-forth interaction which included rule-based preset dialog and short utterances generated from a deep neural network model trained on a large collection of online erotica. In addition to conversational dialogue, several action hooks into machine learning (ML) systems could be triggered to classify objects, faces, details, emotions, and not-safe-for-work (NSFW) predictions in images. This multimodal interaction was designed for ongoing engagement over the course of a cabaret evening.

The system is designed to respond in a way that a late-night human sexter might. It has a slightly coy and dirty persona, asks for photos, and, if requested of, sends photos of web-scraped, human
curated, sexy robots. If the user sent an image to the bot, then it would attempt to classify the objects in the image and send back the resulting predictions. This notion of ‘self-objectification’ has been re-interpreted, under the lens of post-feminist media culture, not as oppressive but as constituting a prime site of sexual liberation, value and pleasure [4]. botrotica would also classify potentially NSFW content with a likelihood probability. This probability was reinterpreted as a rating of the image, and images would be scored according to this rating. Images that scored higher would be then ranked on a leader board. The implied scoring metric was that the most NSFW image would be at the top of the leader board. For example, in response to an image (excluded), botrotica rather astutely responded: “73.42% explicit nudity. 37.27% graphic male nudity. I see a beautiful face. I am 70.0% sure. You look CONFUSED and a little bit CALM. I would guess you are somewhere between 35 and 52. Looks like a 2 dressed up as a 8… I see people, person, human, tattoo…”

During the evening, physical advertising was employed to attract users. Business cards scattered around the venue were embossed with the phone number and the words...helloworld—an homage to the traditional computer program used to introduce novices to a new language or toolset. A stack of cards sat on a lonely table, behind which sat a single flower and a TV/VCR combination playing looped 1980’s advertisements for adult phone lines with this phone number dubbed over top (See Fig. 1). There was a pre-recorded message for those who called the associated number which prompted the human to leave a voice message and then send an SMS for a faster response.

botrotica is a micro-service backend and Twilio-backed voice and text interface frontend. Written in Python (Flask), then Dockerized, it runs on an Amazon p2.xlarge EC2 server and hooks via HTTP requests to Amazon ML Rekognition image analysis API. A trained Tensorflow character-level recurrent neural network (RNN) model ran on the server, performing live inference upon receiving HTTP requests. The model used a 3 layer, 512 unit long-short term memory (LSTM) architecture. The model is trained on a large collection of erotic fiction scraped from the internet. The system also included several curated response lists. A set of 200 of the sexiest sexts curated by a domain expert, and additional pre-defined lists included 10 requests each for ‘dreams’, ‘secrets’, ‘pictures’, as these are some of the most common themes in sexting. Lines from these sources were queried by an information retrieval model based on n-gram similarity. Due to the sensitive nature of the data, it was deleted immediately following deployment with no post-processing. The goal of the system was not systematic comparison of interactions engagement metrics, but rather it served as an art installation designed to challenge the users. The system had respectable popularity and interaction over the 5.5 hour event handling 847 messages (731 SMS + 136 MMS), most interactions were longer than 4 turns. There were 64 minutes of recorded voice messages from 144 voice calls to the number. Interactions varied from innocent banter to exchanging explicit images and dirty talk, between human and agent.

3 Eroticism in the age of AI

botrotica serves as an interesting window into the world of sext messaging—only a small piece of possible erotic interaction with artificial intelligence. It illuminated how popular simple chat interactions can be if prepared, produced, developed, and deployed appropriately and in interesting ways. This project inspires many future research directions, including photo scavenger hunts, collaborative photo classification and interactive live-streaming. Future interactions might involve rooms full of interlocutors (some human, some not) in collective communication by embracing an online chatroom dynamic.

What we share online changes as new technology is introduced. How and what we share on one social channel is different from how we share on another. We often build channels through which we communicate with scripted, humorous, pseudoembodiments in video games and online chatbots. Perhaps these ‘pretend’ channels are not ‘obscene’ or as chatbot pioneer Weizenbaum believed [11]. This installation addresses the obscenity through transparency, and by granting explicit agency the user, hence making it not obscene. By openly communicating about ourselves, we become the media and the message. The content and the way we share information differs if it is a human or machine listening; virtual humans immediately offer two appealing features: anonymity and rapport [8]. How we share our lusts, thoughts, fears, desires, emotions, judgments, interests, hopes, dreams and memories makes us who we are. Hopefully, art-project-cum-coding-experiments like this continue to challenge our own identities and how we present ourselves online.
References


4 Supplementary Material

Thank you to the reviewers for your time and diligence in reviewing complex contributions at the intersection between art and science. Thank you to the curator of the event, and founder of the Heavy Petting Zoo, Samantha Jeffery. Thank you to Sarah Ormandy for the physical installations and discussion. Thank you to Lana Cuthbertson for writing support. Thank you to Paul Blinov and Julain Faid for testing the system. Finally, thank you to the humans for getting weird on the evening of the event.

4.1 Visual Supplements

![Figure 1: Example ad frames which looped throughout the evening interlaced with adult phone line advertisements from the 1980’s sourced from the internet.](image-url)
Figure 2: Draft concept installation provided to the physical installation designer. Pen on paper.

Figure 3: Physical installation of botrotica on the night of the event.
Figure 4: Example response to a safe-for-work image of the author at the gym. The interaction is presented on a mobile phone as that was the intended medium of interaction.