

## Description:

### The “I need Matthew Loewen” chatbot

#### Description:

This project will fall under the categories of “The App” and “The experiment”. The following project will be created out of code and will be the steps leading into an experimental project. (More about this later). This software is licensed under the SMBNF license (see the last page of this document.)

The project idea is to create a chatbot with the single purpose of telling users all of the reasons as to why they should hire Matthew Loewen. The chatbot will deflect questions about itself and when asked it will always redirect the conversation. One example,

**user:** “how are you today chatbot?”

**Chatbot:** “I am ok but enough about me. Matthew Loewen is fantastic. Did you know he is a intramural soccer captain?”

The chatbot will be programmed only with information about general conversation and about Matthew Loewen. Being created this way the bot will only know how to talk about its creator. The goal is to have the chatbot essentially be a copy of the creators resume.

Conceptually this project is rather straightforward, design a chatbot, program it with general conversation in mind, and add in information about its creator. Due to time constraints and worries from the creator this project is being set as a smaller scale project. More on this in the roadmap and calendar sections.

#### Intention:

In my perception what artificial intelligence is is a machine capable of visual perception, speech recognition, and decision-making. It is essentially giving human

abilities to a computer. In the case of this project it will be giving a machine decision-making capabilities in the sense of conversations.

So far in a majority of my work for NMD430 I have heavily relied on randomness and not so much finite planning. This work can be viewed as unpredictable, and at times redundant. One factor that has drawn the creator to chatbots is that they can be used for very specific tasks and be used in such a way so that results with them can be predictable but useful.

To me one of the most interesting parts of AI is just how it interacts with humans. One of my first memories with technology is when my dad first got a smartphone, we were driving and he was trying to use the automated voice features with the phone. He did not have any luck using the device but the interaction that occurred is something that has spared a large interest for me. When the phone did not work he got angry, this anger did not cause the phone to act any differently. To the phone this interaction had no meaning.

From this time on I have always been enthralled with the connection between human and machine. I think that once we get to a certain point it will become impossible to tell the difference between human and computer. One step on this journey is to bridge the connection between computer interaction and human interpretation. The design of this chatbot is in many ways just the first step of getting this done. It is being designed for a very particular reason.

## Framing:

To start looking at other chatbots is the first step that should be taken when designing one. See what works well and what does not. The first chatbot to examine is the [google assistant](#). This chatbot can be used through many IOT devices and can be interfaced with nearly anything. The developer of The “I need Matthew Loewen” chatbot uses google assistant everyday. For him it is very simple to just go ahead and say “set alarm for 8am” doing this takes less time than actually opening up the clock app and manually setting it. This chatbot can be configured with services such as amazon so users with just a few simple words can say order X product and have it delivered without ever looking at a screen. This chatbot is excellent in everyday life.

One project that greatly helped inspire this project is the [Ebay chatting bot](#) through Facebook. This very simple bot helps users find items on Ebay by asking questions about an item the user might be looking for. For example a user might tell the bot that they need some new shoes. The bot will proceed to ask questions about the type of shoes wanted until only a few items are left. The reason why this bot is relevant is that it does one job and it does it very well. If users try and get it off topic it very objectively can bring users back on topic.

Finally the last bot to inspect is [cleverbot](#). Cleverbot takes in user input and over time learns from its conversations. This bot is meant to be a general purpose chatbot and is okay at just that. This bot is one that can be viewed as a model for this project. The way that the bot handles things that it does not understand happens rather well and will be taken note of when designing this project.

## Software architecture:

As mentioned before this project will be an experimental one. The beginnings of this project will start with RiveScript. According to the rivescript website

“RiveScript is developed using the Unix philosophy that software should do one thing and do it well. RiveScript is not a complete, all-in-one chatbot (although those do exist); instead it is designed to be a self-contained software library with a simple API that can be plugged into any existing codebase.”.

The reason why Rivescript has been selected is that it is very easy to use and very good at what it was designed to be used for. It does not take long to get started using it. What is created with rivescript will be the final project that is turned in. This software allows for very easy integration and usage. In the case of this project it will take the form of integration in the web. It will take the following form:

User input is placed in a web browser, the website sends the input to rivescript where it will be processed and output will be determined, this output will be shown to the user and this cycle will repeat.

Files Structure is as follows:

brain/brain.rive (the chatbot script itself), sketch.js (javascript code for connecting the chatbot code and frontend code), libraries/p5.\*.js (libraries for the javascript code) all feed into the index.html file (user interface code.) The users web browser then takes this code and renders it.

# Roadmap

A large portion of this project will be research. It is essential to understand how not just one person speaks and acts but how people in general speak and act. The chatbot must be able to interact with any possible range of words. In addition it is essential to understand how to use rivescript and interface with it. Daniel Shiftman has created an excellent [video series](#) on just this. From here will be the planning of how the bot will communicate users this will be the planning of conversations. Next the bot needs to learn about Matthew Loewen, at the very least be able to take parts of his resume and feed it to users as they request it. Finally the bot will need to be programmed this will be the actual implementation of all previously mentioned steps. Please see the following section.

EDIT:

After development work began on this project it became very evident of the importance of user testing. The developer quickly noticed that their tests did not accurately match user tests and therefore the bot was not being tested correctly. User testing should be done in depth.

Task	Completed
Research on user interaction with the chatbot	Partly. This was greatly more complex than expected.
Design user interface	Completed.
Watch Daniel Shiftmans videos on chatbots with rivescript	Completed. (Was very disappointed with the quality of the videos)
Planning / formatting of interaction between user and chatbot	Completed. (Can be upgraded to allow for more chatting options)
Teaching chatbot about Matthew Loewen and his resume, works, etc.	Completed. (Could possible use some more about his personal life)
User testing	Reoccurring. (Tested with 4 people)

# Calendar

Task	Time Estimate	Complete by Date
Research conversation patterns	5 hours	4/21
Rivescript video series	1.5 hours	4/22
Planning out conversations	4 hours	4/23
Teaching about Matthew Loewen	.5 hours	4/23
Programming prototype	4 hours	4/25
User Testing	3 hours	4/27
Complete program	10 hours	4/29
Bug Fixing	2 hours	4/30

# Appendix

Images below are of the project in use.

## **The Matthew Loewen Chatbot!**

Hello I know all about Matthew Loewen and what we has done with his life.

Ask me about his resume, what kind of person he is, his interests, etc.

Remember to turn your speakers on so you can hear me speak.

If you've found a bug please email Matthew at [matt@mattcodeme.com](mailto:matt@mattcodeme.com)

**Have fun!**

Speak to me:

reply:

## **More about me**

I am a bot developed in rivescript. I use p5.js for some of my functoinality

For my voice I use p5.speech

(image 1 - Interface of the final project)

# The Matthew Loewen Chatbot!

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Ask me about his resume, what kind of person he is, his interests, etc.

Remember to turn your speakers on so you can hear me speak.

If you've found a bug please email Matthew at [matt@mattcodeme.com](mailto:matt@mattcodeme.com)

**Have fun!**

Speak to me:

reply:

**Hello. I am an artificial intelligence agent programmed to inform you about Matthew Loewen or I can send him a message on your behalf. (I'm still learning how to do this) I know all about him. You can call me The Electronic Assistant or TEA. How may I help you?**

## More about me

I am a bot developed in rivescript. I use p5.js for some of my functoinality

For my voice I use p5.speech

(Image 2 - Response from the bot when the user says "hello")



## The Matthew Loewen Chatbot!

Hello I know all about Matthew Loewen and what we has done with his life.

Ask me about his resume, what kind of person he is, his interests, etc.

Remember to turn your speakers on so you can hear me speak.

If you've found a bug please email Matthew at [matt@mattcodeme.com](mailto:matt@mattcodeme.com)

**Have fun!**

Speak to me:

submit

reply:

**I do not understand what you are trying to say. Ask me about Matthew's resume, contact info, hobbies, schooling, and or basic info**

### More about me

I am a bot developed in rivescript. I use p5.js for some of my functoinality

For my voice I use p5.speech

(Image 3 - response from the bot after not understanding what the user just asked it, has different available options for responses)

## The Matthew Loewen Chatbot!

Hello I know all about Matthew Loewen and what we has done with his life.

Ask me about his resume, what kind of person he is, his interests, etc.

Remember to turn your speakers on so you can hear me speak.

If you've found a bug please email Matthew at [matt@mattcodeme.com](mailto:matt@mattcodeme.com)

**Have fun!**

Speak to me:

reply:

**Matthew has 3 jobs #1 - Web Developer - Matthew does full stack application development using PHP, Node.js, and React 2 - AI Developer - Here Matthew does research and application development for AI 3 - Tech Support - Adobe Suite and Microsoft office troubleshooting along with large format printing services.**

### More about me

I am a bot developed in rivescript. I use p5.js for some of my functoinality

For my voice I use p5.speech

(Image 4 - Response from the bot after being asked about matthews jobs)

Video of the bot in use!

<https://vimeo.com/268530193>

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v 0.1

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