

CS Advising Bot

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CS 4624 - Multimedia, Hypertext, and Information Access
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Outline

- Project Overview
- Timeline
- Deliverables
- Testing
- Future Work
- Acknowledgements & References

Project Overview

Virtual assistant for Virginia Tech Computer Science Advising

Provides answers to FAQs related to

- Advising
- Force add requests
- Funding and more

Relieve a burden from advisors & professors

- Less repetitive questions
- More time for important work



Timeline

Early February

Becoming used to IBM Watson Assistant & Setting up plan moving forward

Late March

Have a Working Advanced Chatbot (Text & Menu Navigation + Many Intents)

Mid April

Conduct User Testing and make necessary changes

Have a Working Basic Chatbot (Text + Limited Intents)

Early March

Polish Chatbot UI & Write Up User + Developer Manuals

Early April

Data Integration & personalized responses based on user data

Early May

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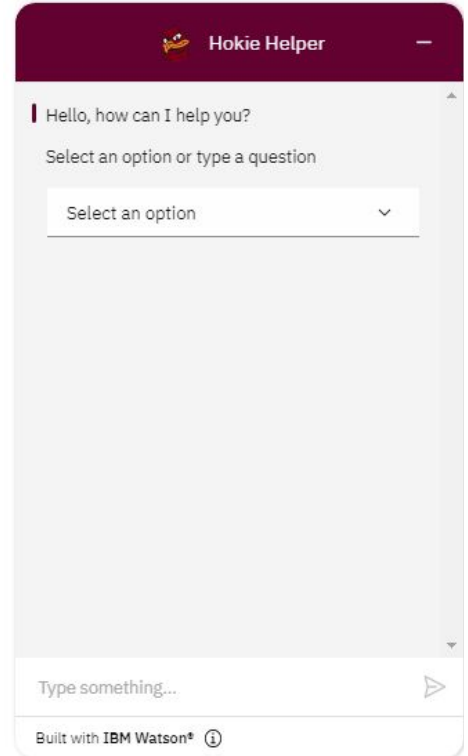
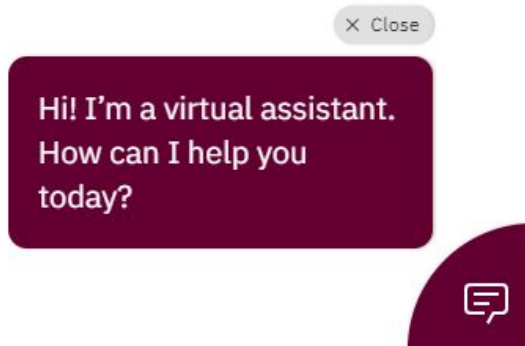
Properly Document All work and write up guide for approaching data integration

Early May

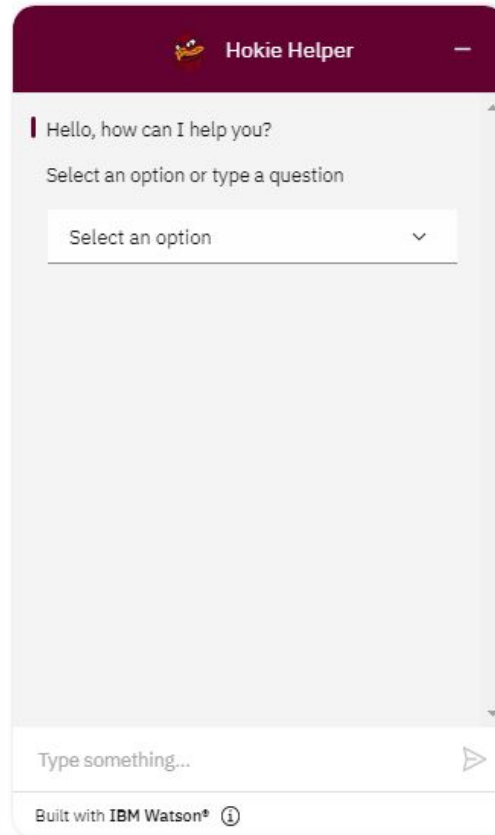
Deliverables

CS Advising Chatbot

Website Integration



CS Advising Bot



<https://sites.google.com/vt.edu/csadvisingbot/chatbot>

Option Navigation

Hokie Helper

Hello, how can I help you?

Select an option or type a question

Select an option

Type something...

Built with IBM Watson®

This screenshot shows the initial chat interface. At the top, there is a purple header with the Hokie Helper logo and name. Below the header, a greeting message is displayed. A prompt asks the user to select an option or type a question. A dropdown menu is open, showing a single option: "Select an option". At the bottom, there is a text input field with a placeholder "Type something..." and a send button. The footer contains the text "Built with IBM Watson®".

Hokie Helper

Hello, how can I help you?

Select an option or type a question

Select an option

- Advising
- Career
- Courses
- Graduate
- Major/Minor
- Research

Type something...

Built with IBM Watson®

This screenshot shows the dropdown menu expanded. The menu is titled "Select an option" and contains a list of categories: "Advising", "Career", "Courses", "Graduate", "Major/Minor", and "Research". The "Courses" option is highlighted with a red box. The rest of the interface is identical to the first screenshot.

Hokie Helper

Select an option

Courses

Select a category

Select an option

- Main Menu
- Academic Records
- Auditing a Course
- CRN
- Core Curriculum
- Course Offerings

Type something...

Built with IBM Watson®

This screenshot shows the "Courses" button selected, which has triggered a red speech bubble containing the word "Courses". Below this, a "Select a category" prompt is shown. A dropdown menu is open, listing options: "Main Menu", "Academic Records", "Auditing a Course", "CRN", "Core Curriculum", and "Course Offerings". The "CRN" option is highlighted with a red box. The rest of the interface is identical to the previous screenshots.

Hokie Helper

Select a category

CRN

CRN

CRN stands for "course request number." This is a five-digit number assigned to each class being offered during a given semester. The first number of the CRN designates the term. (1 or 2 = Spring, 6 = Summer, 8 or 9 = Fall, 12 = Winter).

Select a category

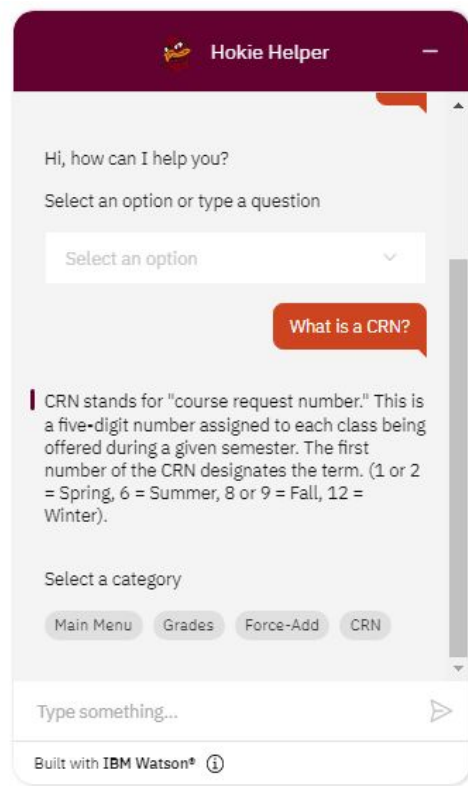
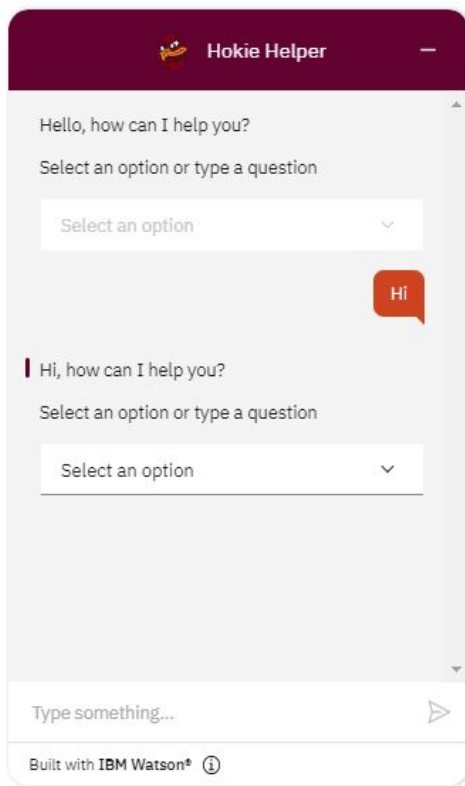
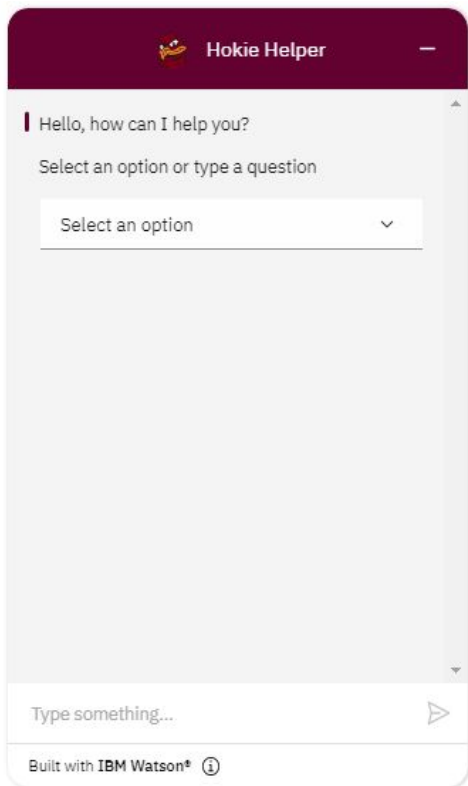
Select an option

Type something...

Built with IBM Watson®

This screenshot shows the "CRN" button selected, which has triggered a red speech bubble containing the word "CRN". Below this, a "Select a category" prompt is shown. A dropdown menu is open, showing a single option: "CRN". Below the dropdown, a detailed explanation of CRN is provided: "CRN stands for 'course request number.' This is a five-digit number assigned to each class being offered during a given semester. The first number of the CRN designates the term. (1 or 2 = Spring, 6 = Summer, 8 or 9 = Fall, 12 = Winter)." Below the explanation, there is another "Select a category" prompt and a dropdown menu with the option "Select an option". The rest of the interface is identical to the previous screenshots.

Text Recognition



Supported Topics

ADVISING

Academic Suspension

Additional Resources

Advising Appointments

DARS

Extracurricular Activities

FERPA

Forms

Freshman/First-year Advisors

Full-time Status

G.I. Bill Benefits

Hold (Blocked, Purged, and Held Registrations)

Important Dates

Plan of Study Worksheets

Policy 91

Probation, Academic

Progress Toward the Computer Science Degree

Schedule a Visit

Second Major Advisor

Student Success

Upper-level Advisors

CAREER

Careers

Co-op/Internship Program

Handshake

COURSES

Academic Records

Auditing a Course

What is a CRN

Core Curriculum

Course Offerings

Course Request

Course Withdrawal Policy

Credit by Exam

Drop/Add

Force Add Requests

Prerequisites

Transfer Credit

GRADUATE

Applying to the graduate school

Five Year Bachelors/Masters Degree Program (BS/MS)

Interested in a Graduate Degree

MEng

MSThesis

RESEARCH

Independent Study

Undergraduate Research

VTURCS

MAJOR/MINOR

Applying for your Degree

Certification

Change of Major

Graduating with Distinction

Minor in Computer Science

Minors in Other Disciplines

Survey with Chatbot

Review

Did you prefer the option based method or the text based method more? *

Option based

Text based

No preference

How easy was the chatbot to use? *

1 2 3 4 5 6 7 8 9 10

Very hard Very easy

How helpful was the chatbot in answering your question? *

1 2 3 4 5 6 7 8 9 10

Not helpful at all Very helpful

Hokie Helper

Hi, how can I help you?

Select an option or type a question

Select an option

Type something...

Built with IBM Watson®

<https://sites.google.com/vt.edu/csadvisingbot/survey-chatbot?>

Testing

- Chatbot accuracy = ability to recognize intents
- 2 methods to test
 - Option Based - can be done locally
 - Text Based - requires extensive external testing
- IBM Watson stores conversations for intent identification analysis
- Chatbot correctly identifies Intent -> add to Examples



Future Work

- Database integration
 - Personalized responses
 - Name of your advisor, GPA info, course recommendations, etc
- Maintenance and upkeep
 - Update with new information
 - Add intents as they arise
- More examples
 - Increase text recognition accuracy



Acknowledgements & References

Client - Professor Sally Hamouda

How Chatbots Work

<https://bigdata-madesimple.com/how-do-chatbots-work-an-overview-of-the-architecture-of-a-chatbot/>

IBM Watson Assistant <https://cloud.ibm.com/docs/assistant?topic=assistant-index>

IBM Watson Assistant Forum

<https://community.ibm.com/community/user/watsonapps/communities/community-home?CommunityKey=7a3dc5ba-3018-452d-9a43-a49dc6819633>

LUIS <https://docs.microsoft.com/en-us/azure/cognitive-services/luis/what-is-luis>

VT CS Advising <https://cs.vt.edu/Undergraduate/StudentServices.html>

VT CS Undergraduate Handbook <https://cs.vt.edu/Undergraduate/Undergradhandbook.html>