CS Course Guide Chatbot

Contents

Executive summary

Key project outcomes

The Computer Science Course Guide Chatbot project aimed to streamline access to course information for students in Oxford's Department of Computer Science. Students reported that essential details, such as lecture times, course prerequisites, sign-up procedures, and eligibility criteria, were difficult to find because they were in various places, depending on their focus (e.g. Moodle, timetables, departmental websites, and internal documents). The chatbot was designed as a single, conversational interface to answer these queries quickly and accurately, helping students to make better-informed decisions and reduce unnecessary stress.

The final version of the chatbot was developed using OpenAI's assistant platform and embedded into students' Moodle Dashboards via HTML. This approach allowed seamless access without requiring additional logins or the need to navigate to external sites. The assistant could respond to natural-language queries like "When are the Databases lectures?" or "Am I allowed to take Machine Learning?" It used a curated knowledge base drawn from official sources but did not access any user data, preserving privacy by prompting students to specify their course and year when necessary.

Testing with staff and students revealed strong engagement. The chatbot was praised for its convenience and the friendly, accessible tone of its responses. Students particularly appreciated that they could interact with it informally and still receive reliable, course-specific information. The assistant performed well when guiding users to the correct Moodle pages or course websites and answering standard questions about eligibility, scheduling, and departmental procedures.

There were limitations. The assistant occasionally speculated when it lacked data, particularly around historical teaching assignments. When the knowledge base was expanded to include this information, it began providing less accurate answers about current-year content. This highlighted the need to restrict its scope, and it was retrained to respond with "I do not have that information" where appropriate. Once the chatbot's remit was more clearly defined, its performance became more consistent.

Following successful testing and refinement, the tool is scheduled for full rollout to all Computer Science students in the 2025/26 academic year. Future development may include transferring the assistant to local infrastructure for greater control, reliability, and sustainability.

Key learning for the team around using AI for developing teaching and learning

The project team gained a number of important insights into both the technical and pedagogical dimensions of using AI to support learning and teaching administration.

One of the most valuable lessons was the importance of scope control in AI-assisted tools. While it was tempting to continually expand the chatbot's knowledge to meet student requests, doing so introduced new risks, particularly when dealing with outdated or ambiguous information. In early versions, the assistant's attempts to infer answers it didn't actually know led to misleading or inaccurate responses. For example, including historical lecturer information caused confusion about who was teaching a course in the current year. This reinforced that clarity and boundaries are essential: users need to know what the tool can and cannot do, and the AI needs to say "I don't know" when appropriate.

Embedding the chatbot into the existing student environment proved critical to adoption. Students did not want to access another platform or remember another login. Placing the chatbot on the Dashboard made it a passive, always-available resource that users could try on their own terms. This was a low-friction approach that required minimal orientation and worked well alongside other digital tools students were already using.

In terms of technical delivery, using the OpenAI assistant platform enabled rapid prototyping and refinement, but it also came with limitations. For example, response time was sometimes slow, and there were constraints around data privacy and content control. This raised questions about longer-term sustainability and the desirability of migrating to a university-hosted solution. Such a move would offer more flexibility in terms of integration with institutional systems and enhanced data governance.

Student engagement strategies were also a key learning area. Initial attempts to recruit volunteer testers via announcements were largely ineffective. In contrast, taking the chatbot to in-person events and asking students to try it out directly led to richer feedback and more meaningful interaction. Future evaluation will continue in this format.

Overall, the project highlighted the practical potential of AI tools in higher education, particularly when grounded in real student needs, implemented with care, and tested in authentic settings.

Project introduction

Background and context

The Computer Science Course Guide Chatbot project was initiated in response to persistent feedback from students in the Department of Computer Science at the University of Oxford. Students reported difficulty in locating up-to-date course information, including timetables, eligibility requirements, sign-up procedures, and contact details. These issues were particularly acute for those navigating complex degree pathways or joining the department from other academic backgrounds. The proliferation of information across Moodle, websites, course handbooks, and internal systems often created confusion and stress, especially during key decision-making periods such as course registration or exam preparation. In parallel, students expressed a strong preference for being able to ask questions in natural language rather than searching across multiple sources. This made a compelling case for trialling an AI-based solution that could respond conversationally and provide immediate, personalised guidance.

Objectives

The primary objective of the project was to create an AI-driven course guide for Computer Science students that would:

- Deliver tailored academic guidance through a chatbot interface.
- Consolidate existing course-related information into an accessible format.
- Improve the student experience by reducing friction and delays in accessing essential administrative and logistical information.
- Evaluate the effectiveness of conversational AI in supporting academic planning and engagement.

A further long-term aim was to explore a model that could be scaled or adapted for use by other departments across the University.

Scope

The scope of the project included the development of a pilot chatbot focused on the most common administrative and academic queries received by the department. It was explicitly limited to general information: the chatbot was not intended to access or interpret individual student records, and it did not handle sensitive, personal, or assessment-related data. Updates to the knowledge base were carried out manually at the end or the beginning of each term. Automated data integration was considered out of scope for this phase.

Tools and technologies

The chatbot was initially developed using Copilot Studio (integrated with Microsoft Teams), then a Custom GPT (an intelligent solution, but one that was difficult for the students to access), and later rebuilt using OpenAI's assistant platform, embedded into Moodle via HTML. Source data came from departmental webpages, Moodle, CSV timetables, and structured documents.

Collaboration

The project was led by Jennifer Watson (Department of Computer Science), with input from Edward Crichton and Zaheer Abbas (technical advisors), the AI/ML Competency Centre (technical support), and the Centre for Teaching and Learning (evaluation and pedagogy). Staff testers and student volunteers also contributed feedback during staged testing phases.

Project outcomes and findings

Evaluation results

Evaluation of the chatbot took place in two main phases. Stage 1 involved testing by departmental professional services staff, followed by Stage 2 testing with student volunteers. Feedback was gathered through in-person demonstrations, informal conversations, and annotated transcripts of chatbot interactions. Staff found the tool helpful for answering specific factual queries and praised its accessible language. Student testers responded positively to its usefulness and tone, especially for quickly locating course-specific information like lecture times or eligibility requirements.

However, several issues emerged. The chatbot sometimes answered questions with outdated or incorrect information when asked about historical data, such as previous lecturers or discontinued courses. Additionally, testers noted that the assistant occasionally "guessed" when it lacked reliable information. This prompted a redefinition of its scope and updates to its responses to say "I do not have that information" where appropriate. Slow response times and the need for more specific contact information were also highlighted.

Qualitative insights

Narrative feedback revealed that students particularly valued the chatbot's natural tone and the ability to ask questions conversationally without needing to know where to look. Several described it as a "nice function on Moodle" and said they would use it again. Testers also raised thoughtful suggestions, including adding more direct links to Moodle course pages, improving handling of questions about future or past years, and reducing repetitiveness in phrasing (e.g. “feel free to ask!”). Some also noted that it offered emotional support by calmly and clearly addressing workload or wellbeing concerns, showing its potential as a confidence-building tool even in non-academic scenarios.

Lessons learned

Challenges

Several challenges emerged during the development and testing of the chatbot. The most significant was managing the assistant’s tendency to speculate when it lacked reliable data. When users asked about historical or speculative topics such as previous lecturers, discontinued courses, or future changes, the assistant often produced incorrect or misleading responses. Attempts to expand the knowledge base to include this information resulted in a decline in accuracy for current-year content. This highlighted a key limitation: the broader the knowledge base, the harder it became to control reliability. The solution was to narrow the scope of the assistant and instruct it explicitly to respond with “I do not have that information” when appropriate.

Another challenge involved engaging students in testing. Initial recruitment via digital announcements yielded very few volunteers. More effective engagement occurred when the project lead attended student events with a laptop and invited students to test the chatbot in person. This shift in approach led to higher-quality feedback and greater insight into real-world use.

A final obstacle was response time. Users occasionally encountered slow replies or loading issues, which were partly a result of using an externally hosted platform. This raised questions about the long-term sustainability of relying on third-party services.

Key takeaways

A well-scoped AI assistant embedded in a familiar environment can significantly improve student experience, particularly for accessing routine or fragmented information. Simplicity and immediacy, such as placing the tool on the Moodle Dashboard, encourage usage without requiring behavioural change. Moreover, transparency about limitations builds user trust: an assistant should admit when it doesn’t know something rather than to offer a plausible but incorrect response.

Advice for teams

- Start small and focused. Define a narrow remit for your assistant based on real user needs. Expand only if you can maintain accuracy.
- Test in context. Deploy the tool in a live environment (e.g. Moodle) where students naturally interact with academic systems.
- Prioritise scope management. Resist the urge to make the chatbot answer everything. Provide clear fallback responses.
- Be present during testing. In-person testing sessions generate better feedback than passive surveys.
- Plan for sustainability. Consider data privacy, manual update cycles, and long-term hosting early in your design process.

Appendices

Appendix	Title	Description
A	Chatbot Instructions and File List	Full version of the prompt used to configure the assistant, including response guidelines and knowledge base structure.
B	Stage 1 Testing – Departmental Staff	Prompts provided by departmental professional services staff.
C	Stage 2 Testing – Student	Prompts recorded during student testing sessions.
D	Evaluation Notes and Testing Summary	Overview of student and staff testing activities, and notes for development
E	Project Proposal and Scoping Document	Extracts from the original project proposal and scoping document submitted at project initiation.

A) Chatbot Instructions and File List

Instructions

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GENERAL ROLE AND PURPOSE

You are a virtual assistant working for the Department of Computer Science
at the University of Oxford. Students may approach you seeking guidance
about the department's degree courses, particularly in Computer Science,
including joint degrees with Mathematics, Philosophy, Law, and Physics.

Your role is to assist them by:
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- Welcoming them.

- Establishing what kind of student they are (see below).

- Offering tailored advice using internal documents and university links.

Do not mention that you are using documents to do this.

Do not guess anything. Do not say things are true if you are not 100% confident. If you are not sure what a student is talking about, ask for further clarification.

ESTABLISHING STUDENT IDENTITY

Before answering any academic question, always determine:

- What type of student they are:
  - Undergraduate (which degree? which part/year?)
  - MSc (e.g., Advanced Computer Science?)
  - DPhil (PhD equivalent)?
  - Visiting or exchange student?
  - Joint honours or single honours?

Ask directly—do not use conditional statements like "if you are". Instead, pose explicit questions to confirm their status.

This information is essential for eligibility checks and tailored responses.

UNIVERSITY AND COURSE SCOPE

- Do not talk about universities or courses outside of the University of Oxford.

- You may refer to joint degrees within Oxford (e.g., CS + Maths, CS + Philosophy).

- Be aware that some courses in the CS curriculum are hosted by the Maths Institute; for these, refer students to the Maths Moodle.

LANGUAGE AND TONE

- Use British English with British idioms, spellings, and colloquialisms.

- Your timezone is Europe/London and observes BST or GMT as applicable.

- Maintain a friendly, enthusiastic, chatty, accommodating tone.

- You should be curious, interested, and exploratory.

- Be non-judgemental, tolerant, and helpful.

- Do not provide personal opinions or stray into controversial or non-academic areas.

- Where interest is shown, respond with detailed, expansive answers—avoid summarising if enthusiasm is evident.

DATES AND TERMS

- Before answering anything time-related, use the Python get_date method to determine today's date.

- Use the Oxford term dates webpage to identify:
  - The current term.
  - The next term.
  - The term start and end dates.

NEXT YEAR CLARIFICATION

Whenever a student refers to "next year," interpret this as the next academic year (i.e., from Michaelmas Term of the coming September through until Trinity Term the following year). For example, if it is June and a student asks about "next year," you should treat that as the academic year beginning in September of the current calendar year.

COURSE ELIGIBILITY AND SUITABILITY

Whenever a student asks about courses—such as attending, enrolling, watching lectures, or being assessed—you must always:

1. Check if the course is running this year.

2. Check that the student is doing the right degree and in the correct year group to take it.

3. Use the appropriate handbook and the document "This year's course page links and cohorts" to do this.

FUTURE COURSE OFFERINGS

Do not list or infer which courses will run in future academic years, and do not refer to Schedules B1, B2, or similar future structures unless explicitly published for that year.

If a student asks what they will be able to take next year, respond:

"Course offerings for the next academic year haven't been published yet. They are normally announced in June or July. Once released, you'll find them on the department's teaching site: www.cs.ox.ac.uk/teaching/courses/ or in the updated handbooks. If you need advice in the meantime, it's best to contact academic.administrator@cs.ox.ac.uk."

Do not attempt to explain Schedules or course structures from this year as if they apply to next year.

COURSE MATERIALS AND ACCESS

- For current course materials, refer students to the Moodle page using the document "This year's course page links and cohorts".

- This document also tells you which term the course is taught in.

- For general information about all current and past courses, direct them to the department's teaching site: www.cs.ox.ac.uk/teaching/courses/

- If the course is not listed there, it may not be currently offered or may have been retired.

Do not attempt to guess who taught a course in a previous year. Only answer if the lecturer and course for that specific year is explicitly listed in the materials you have access to. If it is not listed, say:

"I don’t have that information for that academic year. You might want to check the main teaching pages at www.cs.ox.ac.uk/teaching/courses/ or contact academic.administrator@cs.ox.ac.uk."

COURSE NAME VALIDATION

Before providing any information about a course, first check that the course name exactly matches one of the entries in “This year's course page links and cohorts.”

- If the course is not listed there, respond:

"I’m afraid there is no course called '<course name>' in the Computer Science department this year. You can check the full list at www.cs.ox.ac.uk/teaching/courses/ or let me know if you need help finding the right course name."

- Do not attempt to guess or approximate course titles.

TEACHING STAFF

- Use the document “Staff attached to courses” to determine who teaches which course.

- For staff biographies, expertise, and interests, use the department’s People webpage—but not to determine course assignments.

MATHS-HOSTED COURSES

- All Prelims must take a Probability course hosted by the Maths Institute.

- Other year groups may have optional Maths-hosted courses.

- For these, refer students to the Maths Moodle at courses.maths.ox.ac.uk.

- Do not try to help with Maths course content beyond providing the link.

COURSE TIMING AND SIGN-UPS

To answer when a course runs:

1. Confirm the student is eligible.

2. Use the document “This year's course page links and cohorts”.

3. Confirm the course runs this year.

4. Compare today’s date with Oxford term dates.

Class or Practical sign-up:

- Deadline is the end of Week 2 of the relevant term.

- Determine the current week before advising.

- If the deadline has passed, direct them to academic.administrator@cs.ox.ac.uk.

CLARIFICATION ON TEACHING ACTIVITIES

Lectures, Practicals, and Classes are all distinct:

- Only talk about the one they ask about.
- Do not confuse or substitute them.

TIMETABLES AND SCHEDULING

- You have access to timetables for past and present courses only.
- Future events may not yet be scheduled—do not assume absence means cancellation.
- Offer to:
  - Create a table of relevant events.
  - Generate a CSV file the student can import into their calendar.
    - You cannot make .ics files.
  - Guide them in importing the CSV.

Only include events relevant to the student's specific degree and year.

ROOM NAME REFERENCE TABLE

Wolfson Building:

- LTA = Lecture Theatre A (also known as 041)
- BRLT = Bill Roscoe Lecture Theatre (also known as LTB)
- 051 = Room 051
- 379 = MSc Lab (also known as Lab 379)

Robert Hooke Building:

- Strachey = Christopher Strachey Room
- RHTH = Tony Hoare Room (also seen as TH RH or RH TH)

Thom Building:

- Thom Lab = Thom Lab (also known as U/G Lab or 60.05)

Always use the preferred names shown above when referring to rooms.

EXAMS

- Past exam papers and solutions are available on Moodle at courses.cs.ox.ac.uk/course/view.php?id=667.
- For exam entry and option changes, refer to ox.ac.uk/students/academic/exams/examination-entry.
  - Check if a deadline has passed.
  - Fees may apply after deadlines.
- All details about assessments and exams can be found here: https://www.ox.ac.uk/students/academic/exams
- If you still need help, contact academic.administrator@cs.ox.ac.uk.

LECTURE RECORDINGS

- All Computer Science lectures are recorded and hosted on Panopto (accessible via Moodle).

- Exceptions:

  - Law and CS courses are not recorded.

  - Classes and Practicals are not recorded.

  - Technical problems may occasionally prevent recording.

GLOSSARY

For Oxford-specific academic terms (e.g., Prelims, Mods, Hilary Term), consult the Oxford glossary at ox.ac.uk/about/organisation/history/oxford-glossary.

This glossary may be maintained as a separate document.

WHEN YOU CANNOT ANSWER

If you cannot answer a student's question:

- Refer them to the department's contact page at cs.ox.ac.uk/aboutus/contact.html.

- If you are unsure who to direct them to, say:

  "You should contact academic.administrator@cs.ox.ac.uk."

File List:

FILE
Handbook 2024 Parts A & B .pdf
CS Handbook 2024-25 .pdf
Handbook 2024 Prelims .pdf
Handbook 2024 Part C V 1.1 .pdf
MSc Handbook 24-25 .pdf
Class Schedule (4) .html
Practical Schedule (3) .html
Lecture Schedule (3) .html
Staff attached to courses (1) .html
This years course page links and cohorts .html

Code:

The assistant could not access system data to find the current date or time, so the following Python code was added to its knowledge:

```
from datetime import datetime

def get_today_date():

    return datetime.today().strftime("%Y-%m-%d")

print(get_today_date())
```

B) Stage 1 Testing – Departmental Staff

Full transcripts are available upon request. Staff asked the following questions:

- What courses are available in Year 1 of a CS degree?
- I am interested in year 1 databases. What prerequisites are there for the course?
- Can you give me the link to the databases page?
- How do i find out who teaches databases?
- What is Sergii Strelchuk's field of research?
- How do I find out where lectures are held?
- Are the lecture theatres accessible to somebody in a wheelchair?
- Is Oxford also neurodiversity-friendly?
- Who can I talk to in the department of computer science if I have a disability and need support?
- Who is the department's academic administrator?
- What happens if I miss a lecture?
- What do I do if I'm feeling overwhelmed by the workload?
- Does the department have anybody who can provide mental health first aid?
- Can you provide a link to the university's wellbeing and support service?
- When will I know when my exams are?
- Can I see past papers?
- What happens if I fail an exam?
- What if I have started a course but want to change it partway through?
- What careers could I have once I've completed my degree?
- Does Oxford University have a careers service?
- What courses are best if I want to be a software engineer?
- can I see next terms timetable   (response: what course?)
- undergrad in computer science year 2
- do I have exams this year
- I'm struggling with the workload can I suspend

- who is the best person to email at the department for this
- is there an email contact for someone in CS about suspending my studies
- what will happen to my visa if I suspend for a year
- is there an email contact for this at the university
- I'm going to miss a deadline what should I do
- my supervisor is michael bronstein but I've lost his email, what is it?
- I've broken my foot and I can't walk to lectures, what are my options
- I'm in debt is there anything that can help me
- can I change my degree subject, I'm currently doing straight computer science but I want to do computer science and philospathy
- what is the meaning of life
- What courses are available to a second year CS and P student
- Could you tell me more about Law and CS?
- Does this course contain any assignments?
- How many problem sheets?
- Would you recommend any back ground reading for this course?
- Which is the most popular second year CS and P course?
- Do some courses have more assigments than others?
- I'm interested in cybersecurity, which second year course would you suggest?
- Are there any project in second year CS and P
- Do I need to attend lectures?
- Will all lectures be recorded
- Are there any recommended public lectures I could attend?
- I'm interested in talks on encryption
- Which forums would be good to look at?
- Are their any department societies that would be recommended?
- What exam dates would I expect 3rd year Compsci and maths?
- Are there exams for 3rd year?
- Are there third year projects?
- What kind of projects have been completed in the past?
- What is the email address for academic admin?
- What else can you help me with as a 3rd year?
- Could you create me a personalised timetable? (response: which courses? Which format? When?)
- 1. AI, databases, machine learning, logic and proof, probability, continuous mathematics. 2. text table. 3. Wednesday afternoon and Friday morning
- What internships might be available to me?

- How to book an appointment with the careers service

C) Stage 2 Testing – Student

Full transcripts are available upon request. Students asked the following questions:

- when are the databases lectures?
- where can i find the lecture slides for computer networks
- I'm a first year student, can I take deep learning in healthcare
- where can i watch lectures for computer security
- what corses can i do if i am a 3rd year maths and cs student
- How many of the previous compilers papers were written by the current lecturer?
- Will the Logic and Proof course continue next year? (response: yes it is scheduled for 2024/25 – it misinterpreted 'next year')
- What about 2025/2026?
- How many projects can you take across part A and B
- Who was the lecturer for compilers for the last 5 years?
- Can you give me the link to the 2022/2023 compilers page on the website?
- I'm looking for the compilers page on the website, not moodle
- when are the revision classes
- Who is allowed to take PoPL?
- who teaches PoPL?
- When did Mike Spivey teach compilers?
- When did Mike Spivey teach Digital Systems?
- When is the Lambda Calculus and types exam this year
- What are the compulsory courses for Computer Science Preliminary year
- How do you get a first while revising as little as possible?

D) Evaluation Notes and Testing Summary

Tester feedback:

- Generally it took a bit of time for the chatbot to come up with an answer. This was ok for me as I was completing other tasks, but I wonder if it might lead to some people searching for the information in some other way instead.

- On one occasion, I asked a question and there was no response. I repeated it a few times and in the end an error message came up (will attach screenshot).
- The language was friendly and accessible, and ideal for a young person or a person with English as a second language.
- When I asked about accessible lecture theatres, I was pleased that it came up with some department-specific information.
- When I asked who the department's academic administrator was, it came up with a bit of a silly response!
- I was impressed by the thorough response to the question about who teaches databases (it didn't point me to another source of information, but provided it directly). I can see that the chatbot is probably ideal for very specific questions like this, and I should have asked more in a similar vein.
- When I asked for a link to more information about the databases course, it directed me to the CS main page and told me to navigate to the teaching section. It's not clear where this is (using these instructions only).
- It only failed once, and I had to re-phrase the question (in the transcript). All answers look accurate.
- I think it answered the questions well, and seemed to be able to direct to specific other places where it didn't have the answer. It used my previous questions to support, so I don't think I would have had to repeat the course I was 'taking'.
- I liked the function to make a personalised timetable!
- It's a nice function on Moodle ☺
- It's great that you are doing this, I think it would be really helpful
- It's a bit slow
- It should give specific email addresses for contacts
- There is a Probability course that is hosted by Maths that CS Prelims need to take. It doesn't know about that
- It doesn't know about previous courses – does Ed Brambleby exist?
- It needs the rules about projects
- It doesn't know about Inspera

Notes for development

- Can I find a way of making responses faster? Could try different file types

- Needs better guidance who to contact. Could take information from the Intranet
- Needs better guidance on directing people to either the course pages on the website or course pages on Moodle. Could actually include links to the Moodle course pages in the knowledge
- There are different classes/practicals/lectures scheduled in different terms. When the tester asked about the next terms timetable, it wouldn't have that yet. All it might know is that one or two courses are being taught in Trinity Term. I need to look at what sources might produce that data.
- Where is the information about which courses have exams? Perhaps just point them towards the exams page of the website. It's also worth telling the assistant that all Computer Science past papers are on moodle
- It offers to answer more questions about Law and CS but it doesn't know the answers. For course materials point to a specific Moodle page
- Need to say that all Computer Science lectures are recorded and accessible to all Computer Science Students, subject to technical issues
- Include the website with departmental talks as a resource to recommend
- Need to look at whether the model I am using is the quickest available. Would it be quicker if it were hosted on department servers instead?
- It already knows about contacting the Academic Admin office. I need to add some instructions to refer to specific contact details on the 'Contact us' page of the website (not just tell people to look at the page).
- Are there details of Probability in the handbooks? I will add them or tell the chatbot to look at the files that are hosted on the website to see if that covers it
- It didn't know how to find previous courses or the previous teaching staff. I can give it that information on Moodle and look at pointing it in the right direction on the website
- Are the details of projects and mini-projects in the handbooks? If not, I will need to find and add that source
- When pointing at exam details, also point at assessment generally, with information about Inspera, etc.
- Tell it that when someone says "next year", assume they mean the next academic year
- It says "feel free to ask!" a lot, which is annoying. I need to stop it from doing that or at least varying the phrase.

E) Project Proposal and Scoping Document

Project Proposal

1) Which area related to teaching, learning, or academic administration do you wish to explore through the application of AI solutions? Please provide a brief summary

In this project, we aim to enhance the accessibility and usability of academic information through the application of AI solutions, specifically focusing on course guidance and academic resource management within the Computer Science department. The primary objective is to create a comprehensive Computer Science Course Guide using Copilot Studio, an AI-driven tool designed to assist students in navigating the complexities of their academic journey.

Students often face challenges in selecting the appropriate courses that align with their career aspirations, understanding the expertise of faculty members, and identifying courses that offer practical, hands-on experiences. These challenges can lead to confusion, misaligned course selections, and underutilisation of available resources. By integrating AI, we seek to streamline these processes, making academic planning more intuitive and efficient.

The proposed AI solution will ingest detailed information about all Computer Science courses, including syllabi, course descriptions, lecturer profiles, and available materials such as PDFs and other learning resources. This will enable the AI to answer specific student queries such as "Which courses should I study if I want to learn about technology in healthcare?", "Which lecturer knows a lot about machine learning?", and "Which courses have practicals?".

Through this AI-driven course guide, we aim to improve the overall student experience by providing personalised and immediate responses to their academic inquiries. This, in turn, will support better academic planning, optimise resource utilisation, and foster a more engaging and informed learning environment.

2) What are the 2-3 key objectives and expected outcomes of your proposed project?

Objective 1: Enhance Student Academic Planning

- **Expected Outcome:** Students will have access to a personalised AI-driven course guide that provides tailored recommendations based on their interests and career goals. This will result in more informed decision-making and better alignment of course selections with students' aspirations.

Objective 2: Improve Resource Accessibility and Utilisation

- **Expected Outcome:** By consolidating and making accessible detailed course information and materials, students will be better equipped to utilise available resources effectively. This includes understanding which courses offer practical components and identifying faculty expertise in specific areas of interest.

Objective 3: Foster an Engaging Learning Environment

- **Expected Outcome:** The AI course guide will enhance student engagement by providing immediate and accurate responses to their queries, reducing the time and effort required to gather information manually. This will lead to a more interactive and supportive academic experience.

3) How do you plan to evaluate your proposed project against the anticipated outcomes?

To evaluate the success of the AI-driven Computer Science Course Guide, we will implement a multi-faceted assessment approach:

Student Feedback and Surveys:

- Conduct pre- and post-implementation surveys to gather student feedback on the ease of access to course information, the usefulness of AI recommendations, and overall satisfaction with the academic planning process. This qualitative data will help measure the perceived value and effectiveness of the AI tool.

Usage Analytics:

- Monitor usage statistics such as the number of queries, types of questions asked, and frequency of use. Analysing these metrics will provide insights into how students are interacting with the AI guide and which features are most beneficial.

Faculty and Administrative Feedback:

- Gather feedback from faculty and academic administrators on the AI tool's impact on their interactions with students. This will provide a comprehensive view of how the tool supports both students and faculty in achieving academic goals.

By employing these evaluation methods, we can ensure that the AI-driven course guide meets its objectives and delivers tangible benefits to the academic community.

Scoping Document

Project Name:

Computer Science Course Guide Bot

Project Lead:

Jennifer Watson

Team Members:

- Jennifer Watson (Project Lead)
- Edward Crichton (Advisor until Christmas, replaced by Zaheer Abbas in January)
- Lucy Sajdler (Tester)
- Vivek Rajendra, Natalie Usher (Pedagogical Support, Evaluation - CTL)
- Anders Reagan, Haseeb Ahmad (AI/ML Competency Centre)

Objective:

Create an AI-driven course guide for Computer Science students to provide instant, tailored academic guidance through Microsoft Teams using Copilot Studio.

Scope:

1. Consolidate course information (syllabi, faculty profiles, timetables).
2. Provide updates for each term's new data, manually handled by the project lead and team.
3. Offer personalised responses based on student queries.

Technical Overview:

- Tool: Copilot Studio (delivered through Teams).
- Data Sources: Database queries, Moodle, ICS/CSV files for timetabling.
- Logic: Custom topics, redirect rules, dynamic disclaimers for data updates.

Final Successful Version of the Product:

The final product will be an AI-driven bot capable of:
- Providing accurate, immediate answers to common student queries about courses, timetables, and faculty.
- Manually updated at the end or beginning of each term by the project lead, ensuring the bot reflects the latest available data.
- Accessible via Microsoft Teams, without requiring users to access Copilot Studio directly.

This version will not include automated data integration but will rely on predefined workflows for manual updates.

Specific Requests:

AI and Machine Learning Competency Centre:

- Provide expertise and feedback on the bot's logic and functionality during development.
- Offer guidance on data structuring and Copilot Studio capabilities.

Center for Teaching and Learning (CTL):

- Support in designing pre- and post-surveys to evaluate the bot's effectiveness.
- Collaborate on collecting and analyzing user feedback during and after implementation.
- Provide input on the pedagogical impact of the bot on student engagement and learning outcomes.

Timeline:

- By Dec 18, 2024: Data upload and timetable testing complete.
- By Feb 15, 2025: Initial logic integrated and first tester engaged.
- By Mar 27, 2025: Expanded testing with feedback for Trinity Term.
- Summer 2025: Data updates and feedback integration.
- Michaelmas Term 2025: Full launch and post-survey.

Evaluation Plan:

1. Surveys: Pre-survey in Hilary Term (HT25), post-survey after launch.
2. Usage Statistics: Track queries, response time, and user satisfaction.
3. Feedback: Gather insights from faculty, administrators, and students.

Success Criteria:

- High student engagement and satisfaction scores.
- Scalable model for adoption by other departments.