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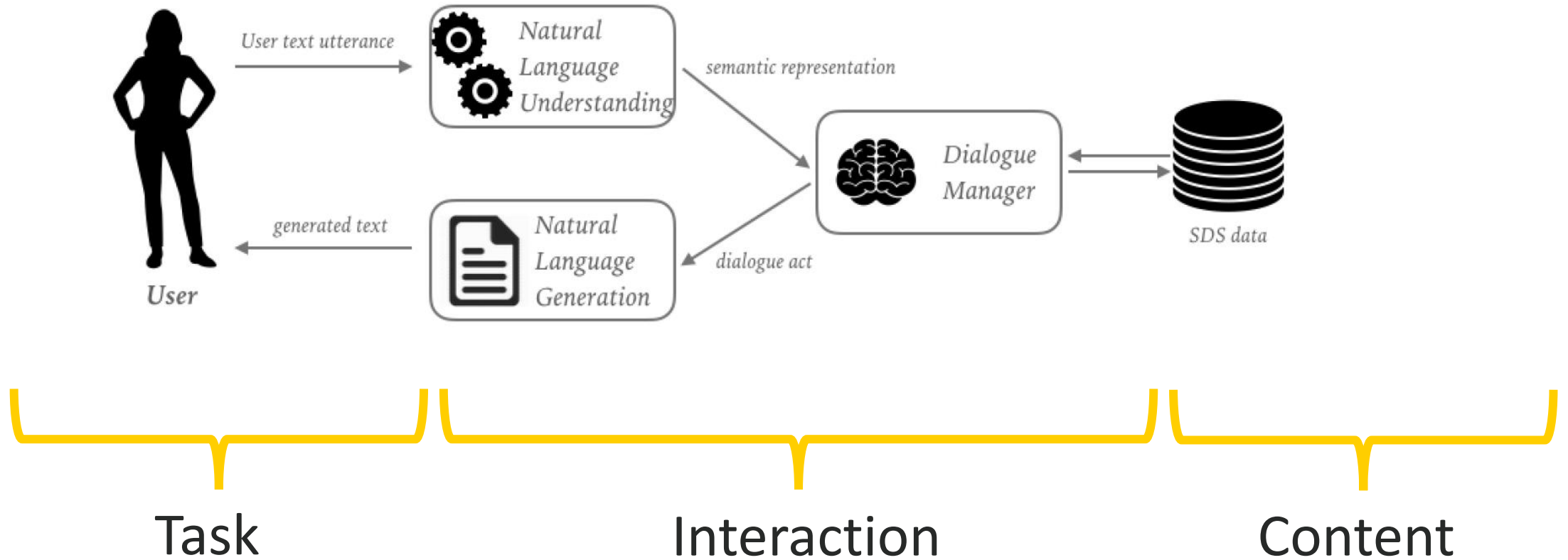
School of Computing,
Engineering & the
Built Environment

Practitioner-led chatbot design and evaluation

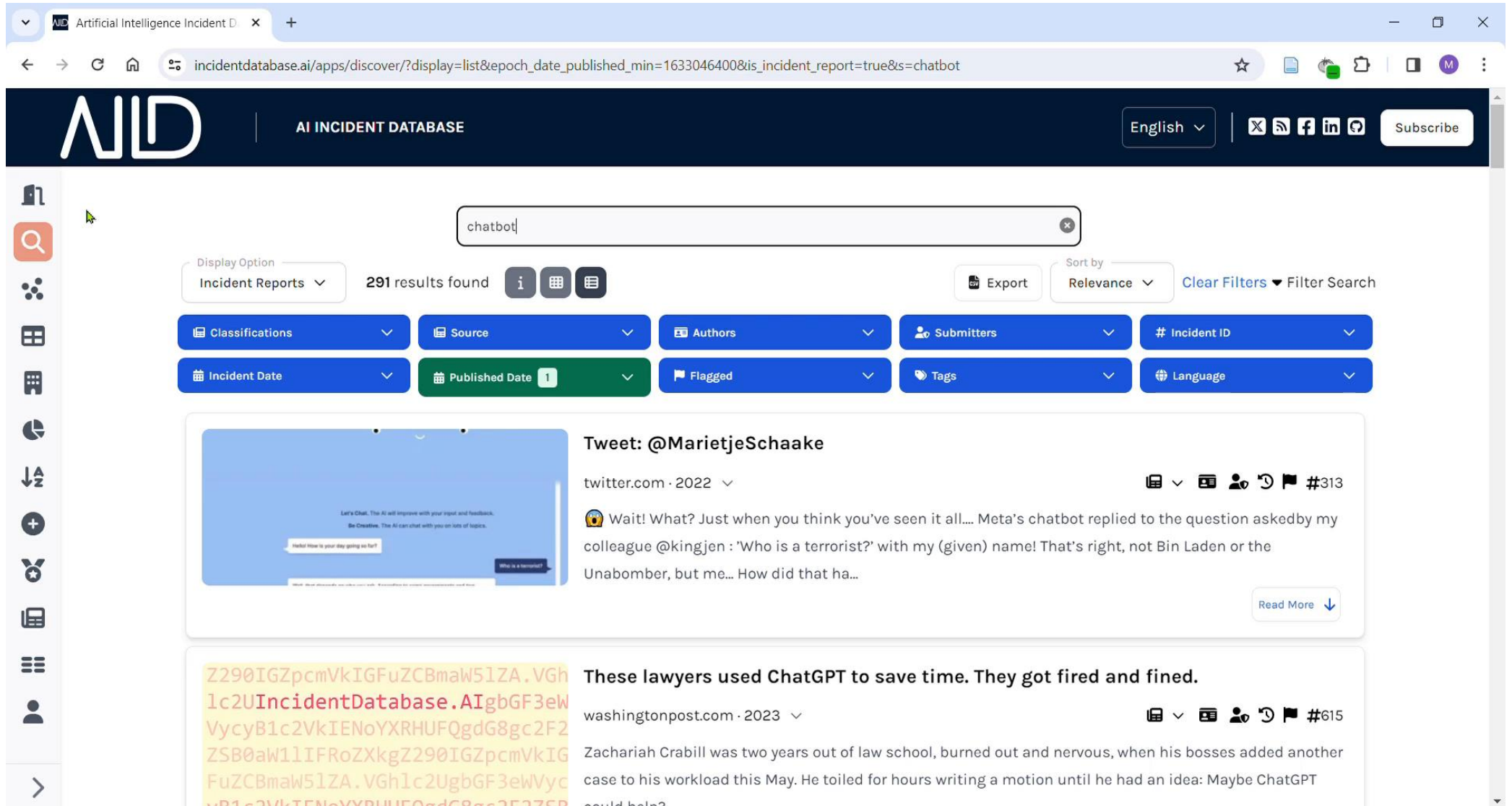
Marianne Wilson – PhD Student

Supervisors: David Brazier, Dimitra Gkatzia & Pete Robertson

Chatbots



Chatbot Risks



The screenshot shows the AI Incident Database (AID) website interface. The browser address bar displays the URL: `incidentdatabase.ai/apps/discover/?display=list&epoch_date_published_min=1633046400&is_incident_report=true&s=chatbot`. The website header includes the AID logo, the text "AI INCIDENT DATABASE", a language selector set to "English", social media icons, and a "Subscribe" button. A search bar contains the text "chatbot". Below the search bar, the interface shows "291 results found" and options for "Display Option" (Incident Reports), "Sort by" (Relevance), and an "Export" button. A grid of filter buttons is visible, including "Classifications", "Source", "Authors", "Submitters", "# Incident ID", "Incident Date", "Published Date" (with a "1" indicator), "Flagged", "Tags", and "Language". The search results list includes a tweet from @MarietjeSchaake (2022) and a news article from Washington Post (2023) titled "These lawyers used ChatGPT to save time. They got fired and fined."

Artificial Intelligence Incident Database

Search: chatbot

Display Option: Incident Reports | 291 results found | Export | Sort by: Relevance | Clear Filters | Filter Search

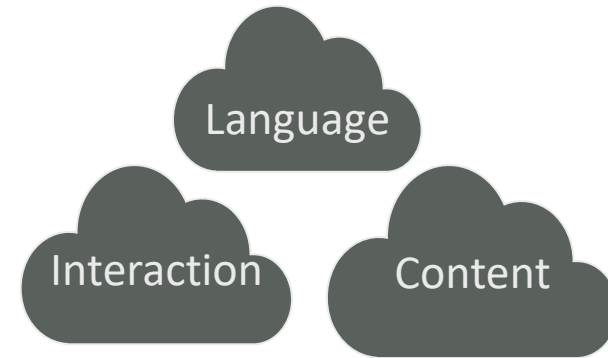
Classifications | Source | Authors | Submitters | # Incident ID

Incident Date | Published Date 1 | Flagged | Tags | Language

Tweet: @MarietjeSchaake
twitter.com · 2022
Wait! What? Just when you think you've seen it all... Meta's chatbot replied to the question asked by my colleague @kingjen: 'Who is a terrorist?' with my (given) name! That's right, not Bin Laden or the Unabomber, but me... How did that ha...

These lawyers used ChatGPT to save time. They got fired and fined.
washingtonpost.com · 2023
Zachariah Crabill was two years out of law school, burned out and nervous, when his bosses added another case to his workload this May. He toiled for hours writing a motion until he had an idea: Maybe ChatGPT could help?

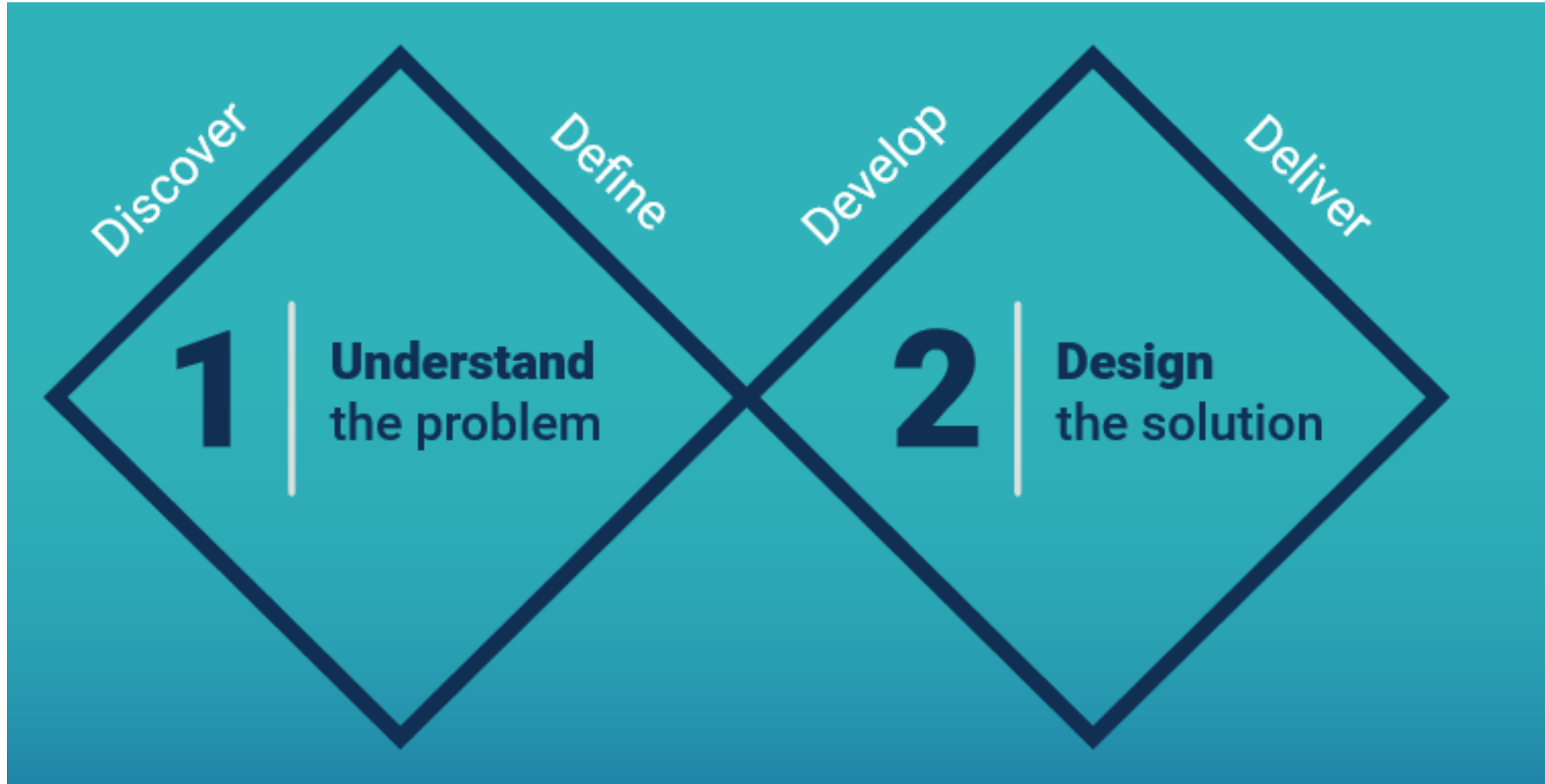
Research Problem



Design a **useful** career support chatbot to support **SDS's services** for young people

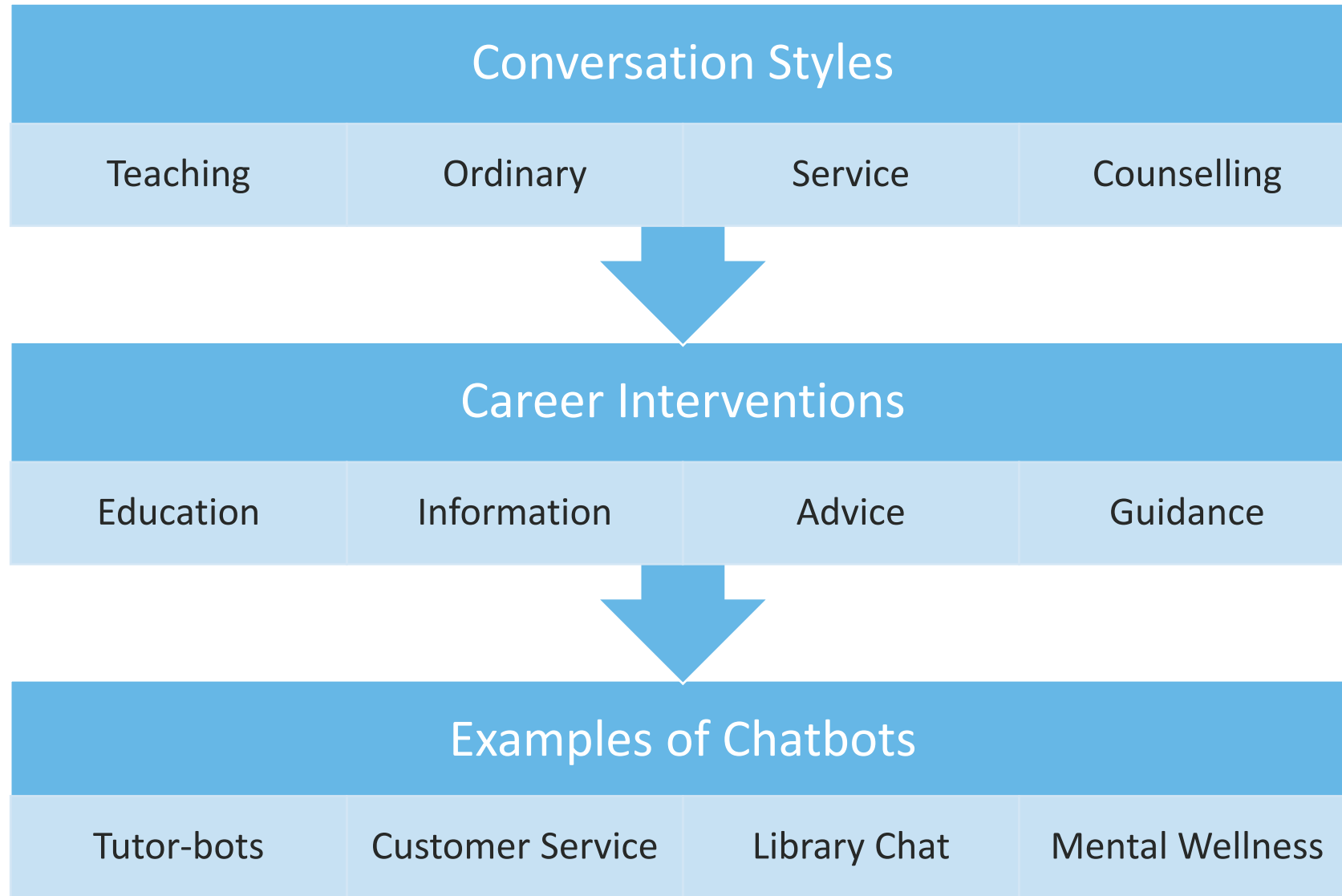


Design



- Reproduced from The Scottish Approach to Service Design by the Scottish Government <https://www.gov.scot/publications/the-scottish-approach-to-service-design/>

Conversation Design



Domain Expertise in AI



Delphi Studies

- Panel of Experts
- Multiple rounds of surveys
- Results of previous round included
- Anonymous

What

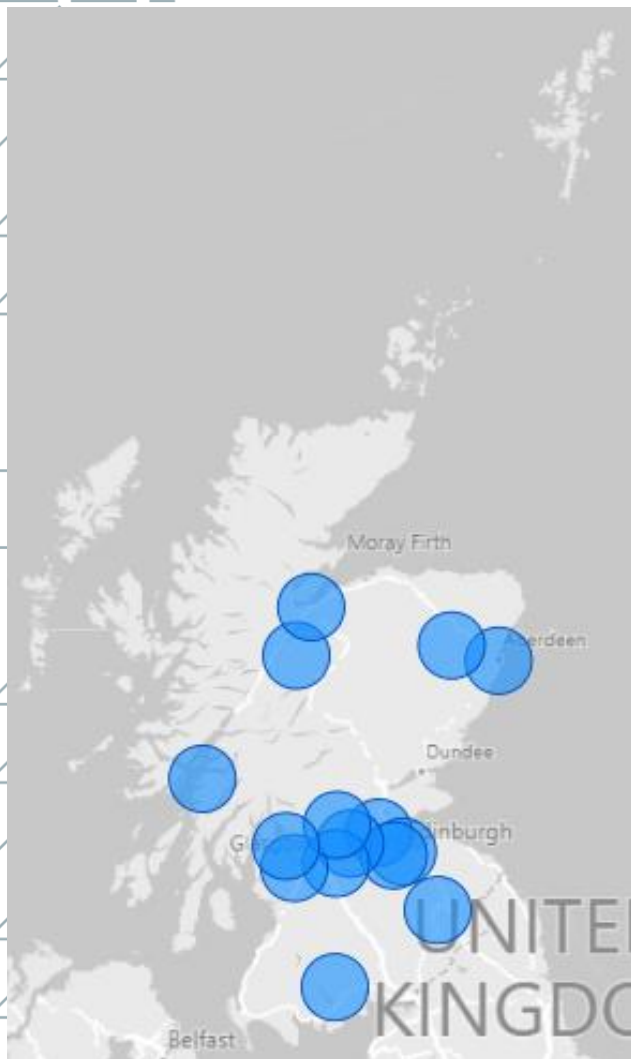


- Build Consensus
- Qualitative data
- Mitigate prestige/ power
- Analysis is refined, rejected or validated

Why



The Expert Panel



Current Role	No. Recruited
Career Adviser	14
Policy & Professional Practice	7
Career Education	3
Service Design	2
Other	3
Total	29

Experience in CEIAG

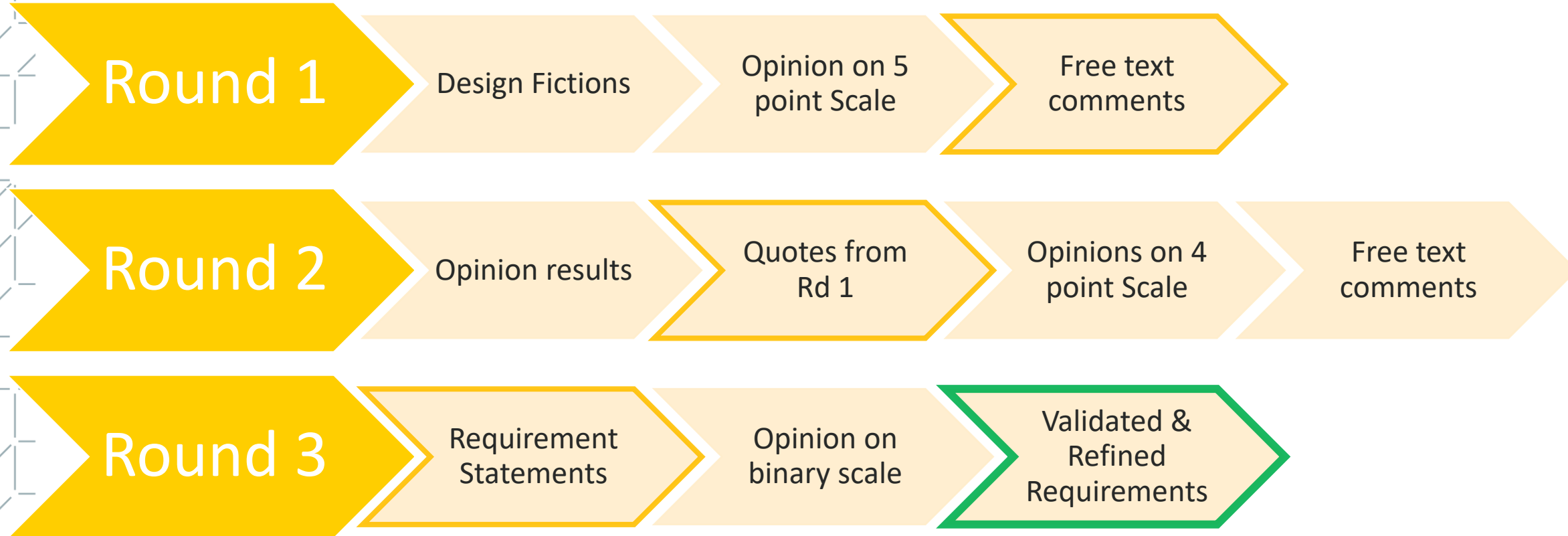
15

Years

(average)

Experienced In:	RD 1	RD 2	RD 3
Practice with young people in school	70%	59%	60%
Practice with young people outwith school	74%	64%	60%
Practice with other customer groups	65%	45%	70%
Service design	48%	14%	40%
Policy	43%	32%	30%
Other	22%	27%	15%

Delphi Study Design



Requirements: The Task

Dimension	Requirement	Agree	Disagree
Task	The chatbot should support young people to navigate information in a way that encourages curiosity and exploration .	19	1
Task	The chatbot should function well as a tool for independent use. It should not require significant changes to existing services in order for potential benefits to be realised for young people.	19	1
Outcomes	The chatbot should ensure that the range of information presented is broad enough to encourage users to explore their options further.	20	0
Outcomes	It should be clear to users that the chatbot is not intended as a tool for career decision-making.	18	2

Requirements: Common Sense

Design Dimension	Requirement Statement	Agree	Dis-agree
Content & information sources	The chatbot should focus on guiding users through existing SDS-managed information, but it may be appropriate to direct users to carefully selected external information sources where required.	20	0
Integration with other services	The chatbot should ensure that all users are aware of how to access other sources of support from SDS (e.g. Helpline, appointment with Careers Adviser)	20	0
Integration with other services	Users should be made aware of alternative sources of support, and how to access them before any potentially overwhelming responses are provided.	19	1
Integration with other services	To ensure that the chatbot increases young people's access routes to career support, it should only be introduced as an additional complement to, not replacement for, any aspect of existing services.	18	2
Persona & Interaction	The chatbot should be tested with young people to determine the appropriate volume and complexity of information to be included in chatbot responses.	20	0

Some trickier ones

Design Dimension	Requirement Statement	Agree	Dis-agree
Ethics	Ensuring that users understand the scope and limitations of the chatbot is important for aligning with SDS's approach to career support.	20	0
Ethics	The Equality Impact Assessment for the chatbot should include individuals who face digital literacy and/or technology infrastructure barriers. Any negative impacts identified should be fully mitigated before the chatbot is introduced.	16	4
Personal data & privacy	Customisation of responses should be based on high level, non-sensitive information provided by users during the conversation only. (For example: whether user is school/unemployed/college etc; non-specific location).	19	1
Personal data & privacy	The chatbot should not be password protected, and therefore should not store or process personal or sensitive data.	17	3

A Really Specific One

Design Dimension	Requirement Statement	Agree	Dis-agree
Ethics	If it is unclear what level of support a user required, it would be preferable for the chatbot to encourage the user to contact the helpline or a careers adviser, before continuing the interaction, even though this may result in some unnecessary calls / appointments	17	3
Ethics	There may be occasions where it is clear that a user requires a level of support beyond the scope of the chatbot but continues the interaction even after being advised to contact the helpline or an adviser. In these circumstances it would be preferable for the chatbot to reiterate other sources of support available and end the conversation in order to avoid the risk of confusing the young person, even although this may mean their experience with the chatbot is perceived negatively.	11	9

Summary

- **Useful** Conversational Agent = Understanding the **Task**
- Understanding the Task = Working with **Domain Experts**
- Domain Experts = **SDS Staff**

- **Delphi Study**
 - 3 rounds of surveys
 - Round 1 – Design Fictions
 - Round 2 – Experts in their own words
 - Round 3 – Requirement Statements
- **Requirement Statements = System Evaluation**

The chatbot should support young people to **navigate information** in a way that **encourages curiosity and exploration.**

Thank you!



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