In the beginning…

There really wasn’t a general notion of having good/friendly “human-computer interaction” considerations (let alone an entire research area) for the first few decades of the technology.

The users were mostly seen as people from STEM areas and making things user-friendly didn’t seem to be a priority for those users.

However, thinking about a language like ForTran, which was designed with the algebraic formulas scientists and engineers use could be an early example.
However…

Some interesting user-centered tech examples before it become more mainstream:

- Early devices that are seen as precursors to the typewriter were made to allow visually impaired people write letters.
  - Similarly, what we would call carbon paper was used before there were typewriters, to allow visually impaired people write without the problem of not being able to see their quill was dry.
- In the computer age, the programming language ForTran was designed in the 1950s with the algebraic formulas scientists and engineers use.

Mind the gap…

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1940s</td>
<td>The idea of a <em>trackball</em> for controlling a system was invented (year and details tricky).</td>
</tr>
<tr>
<td>1952</td>
<td>The first <em>light pen</em> was built, the first <em>speech to text</em> system was built.</td>
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<tr>
<td>1964</td>
<td>First <em>computer mouse</em> was built.</td>
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<tr>
<td>1982</td>
<td><em>Human Factors in Computer Systems</em> conference (the first of what would become SIGCHI conferences).</td>
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<tr>
<td>1983</td>
<td>HCIL founded at UMD.</td>
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<tr>
<td>1983,1985</td>
<td>The first two SIGCHI conferences.</td>
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</table>
Why the gap? I think…

Due to advances in technology and companies like IBM marketing a “personal computer” to the corporate world, there was a shift in late 70s / early 80s of where computers were and who was using them.

• “suddenly had to” think about usability for less technical users
• business model needed to consider ease of use and how that would connect with ease of acceptance and had the scale to make that cost-effective

Speech to Text

An interesting and ubiquitous technology today (think Siri, Alexa, telephone menus where you speak your response), automated speech to text was being research as early as the 1930s and implemented as a ten-word (zero through nine) proof of concept in 1952.

– It was seen as a money pit, and spoken against by influential people and lost much of its funding.
– Use as an assistive technology for the disabled was seen by some as a way to fund the research until it could be widely usable (profitable).
What did people start to care about?

- 1980s: word processing, databases, etc.
- 1990s: e-mail, web, working with others, etc.
- 2000s: individual content authoring, tagging, sharing, finding, etc.

What can HCI researchers do to help?

Generate new ideas for interfaces, run controlled studies, provide guidelines with scientific foundation.

Investigate the design process itself, design tools to assist in the design process and even for implementation.

Build proof-of-concept prototypes that can then inspire real-world applications.
What disciplines “make up” HCI?

MANY!
- Computer Science
- Computer Engineering
- Cognitive Psychology
- Business Management
- Information Science
- Library Service/Science
- Visual Design
- Communications
- Others?

HCI research community issues

They both need to find the “right” balance between scientific rigor in their research and it also having practical relevance.

They need to acknowledge and deal with the fact that experiments done in lab settings don't always do a good job of representing “reality” of use(s).

They exist in a world of rapid development cycles, and that can make certain research techniques untenable.
What can HCI measure?

Some "classic“ things to measure are a user’s performance time, accuracy, and satisfaction (though that one is a bit vague). So, what are some modern issues/concerns?

- trust/confidence?
- accomplishment satisfaction?
- what people are seeing? (gaze tracking)
- user migration to other platforms?
- non-work contexts (eg: having fun)?
- health/global/social contexts?
- success of an online community?

Generalizability

In reality, since there are many factors in how a study is done, we really should have multiple studies by different teams using different methods all looking at the same issue and everyone reporting results (good and bad) and hope to find consensus. How often is this done in HCI?

There is also a fundamental question regarding what number of people should be required in a study which is currently un-answerered (or at least there is no agreed upon answer to the) in HCI (and other fields).
Longevity of Results

What is the “shelf life” of results in HCI?

– One well-studied question was broad/shallow or narrow/deep for laying out information (broad/shallow is best) but in the age of the search engine and high-speed access I have to wonder whether their results are still “true” or even relevant for many things.

– Improvements to underlying technologies can alter some facets of the interface/interactions that caused it to be difficult to use to the point where they can be much better.