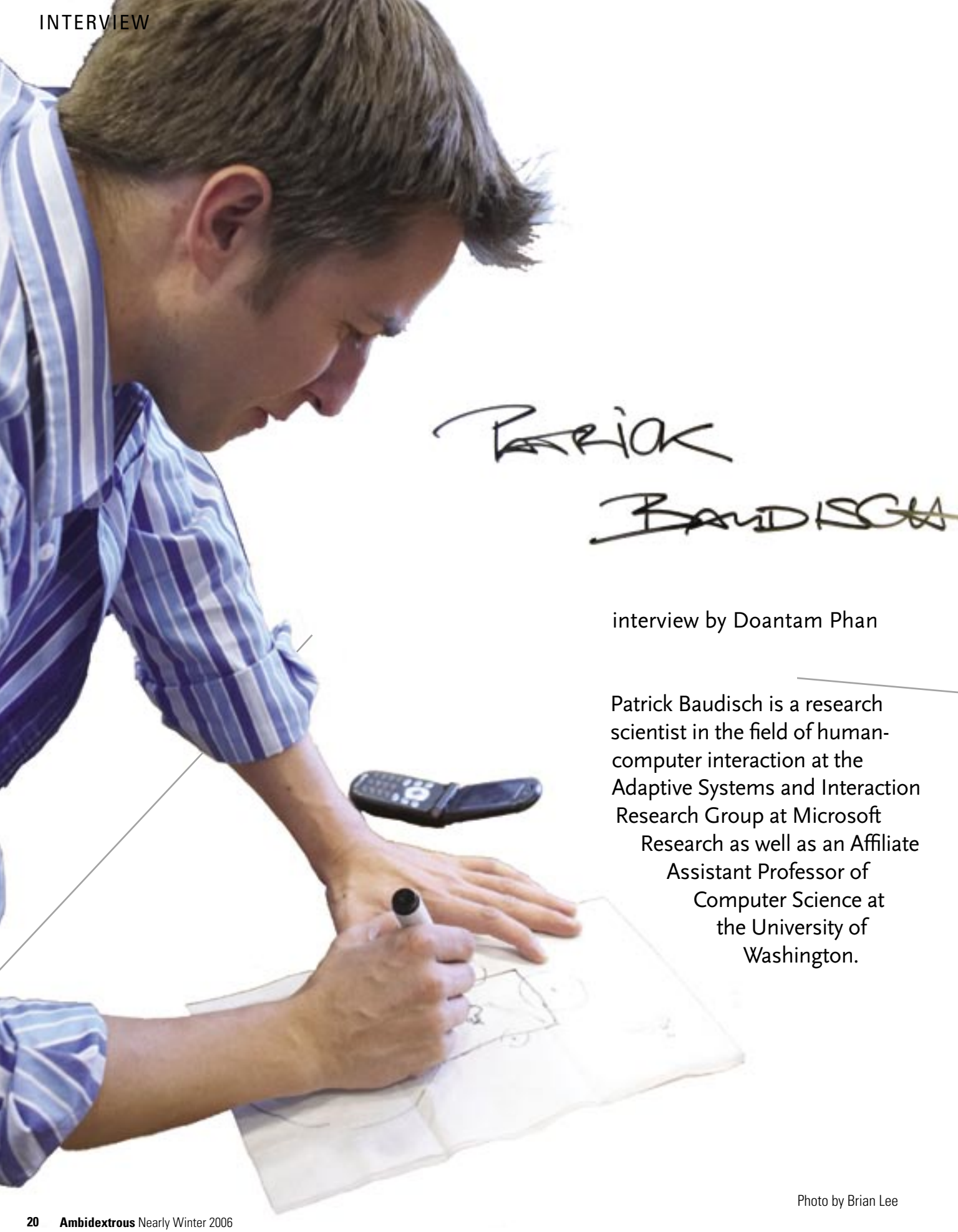

Patrick Baudisch

interview by Doantam Phan

Patrick Baudisch is a research scientist in the field of human-computer interaction at the Adaptive Systems and Interaction Research Group at Microsoft Research as well as an Affiliate Assistant Professor of Computer Science at the University of Washington.

Photo by Brian Lee

What is interaction design?

Interaction design can be looked at from different perspectives. Like many researchers in this field, I am wearing two hats.

When working on a project with concrete existing users, I often need to adopt techniques from usability engineering. Here user-centered design is the key component and the relevant skills are rapid prototyping and evaluation. While a good amount of intuition can go a long way, I think what makes an outstanding interaction designer is the ability to successfully design for a target audience of which one is not part. This requires knowing the limits of one's intuition and when to apply formalized methods, such as prototyping and evaluation.

When working on my research projects, the perspective is five to ten years out, which means that I am trying to envision what "future" users will need. Many user-centered design techniques require talking to actual users, but I obviously cannot go out and interview future users because they don't exist yet. Take wall-size displays, for example. Yes, there are a handful of users today, but these tend to be expert users, working with very specialized applications. When I am envisioning a general-purpose user interface for a future where people use wall-size displays casually, I consequently find myself in the realm of speculation. I apply user-centered design techniques where possible, but basic research methodology and intuition tend to play a bigger role here.

What's your current research area?

The first of my two main research areas is to envision a future where users have access to very large personal displays. I tend to think of them as high-resolution wall-size displays, but in many cases multi-monitor setups, which are in use today, bring up the same questions and afford similar solutions. My first project in this space was focus-plus-context screens: a large projection-based display into which I seamlessly embedded a high-res LCD display. This resulting display imitates the structure of the human eye with its low-res periphery and hi-res fovea.

Since then, I have focused mostly on helping users interact with different types of displays. The projects I particularly enjoy use techniques for reaching distant displays content on wall-size touch screens. While previous work suggested extending the users' reach, we propose the opposite approach, i.e., bringing content to the users. If you are curious, you can try out prototypes of "drag-and-pop" and "tablecloth" on my homepage (www.PatrickBaudisch.com).

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My second main research area is small screens. Currently I am focusing on visualization techniques that help users view large documents, such as maps or web pages, on the small screens. A recent project is "summary thumbnails." We display web pages as miniature versions that are just wide enough to fit the width of the screen. Our thumbnails are readable because we delete text fragments instead of shrinking fonts.

What makes me passionate about phones is the huge yet still growing impact they have on people worldwide. We start seeing more and more tasks that we used to perform on PCs now covered by phones, things like checking e-mail, driving directions, or shopping. I believe that this trend will continue and I am wondering how far it will go. In the not-so-distant future, we will look back and find it surprising that we used to log into a PC to do this. New visualization and interaction techniques will make a tremendous contribution here.

How do you select a project to work on?

I always have a large number of projects I work on at the same time—up to eight. Then, when I am getting closer to a deadline, I narrow this down to one to three projects that I can actually get done in time. The others go back into the pool. I may pick them up later, or not.

The core motivation behind my approach is it helps me let go of bad project ideas. Not all ideas can be good, and sometimes an idea that looked promising in the beginning turns out to be not novel, not applicable, or simply not that great. By simultaneously pursuing multiple ideas, letting go of a bad idea is much less painful. As a result, I paint myself into a corner less often then I used to do, when I put all my eggs in one basket.

Having a rich pool of ideas to choose from is crucial for my approach. To make sure I don't forget ideas I always record them right away, typically using the voice recorder in my phone. Sometimes I take voice notes late at night and it is quite challenging to decipher my mumblings the next morning. While many of my ideas are in my field of interaction and visualization techniques, I keep a log of ideas for pretty much everything—from information filtering to what I think might be an easier-to-use umbrella.

How did you get started working on human-computer interaction?

Without knowing it. I was a Ph.D. student in Darmstadt, Germany and I worked on user interfaces for information filtering systems. A friend of mine saw my work and said, "Oh, I did not know you were in HCI, too." That was the first time I heard of that field.

What are challenges in interaction design?

The space of interaction design and human-computer interaction is full of exciting challenges. While the underlying hardware of our systems still advances at a dramatic rate, the capabilities of users do not. Addressing this bottleneck is therefore as important as ever.

Cell phones and other small-screen devices offer a host of interesting challenges way beyond the visualization questions I am working on today. Phones in particular also have the potential of reaching a much wider audience worldwide than PCs ever have or will. Rural computing will be a particularly rewarding field to study.

Full interview available online at http://ambidextrousmag.org