



THE GRILL: Networking visionary Rob Faludi talks about monitoring energy consumption and introducing your toaster to your smoke alarm. **PAGE 18**

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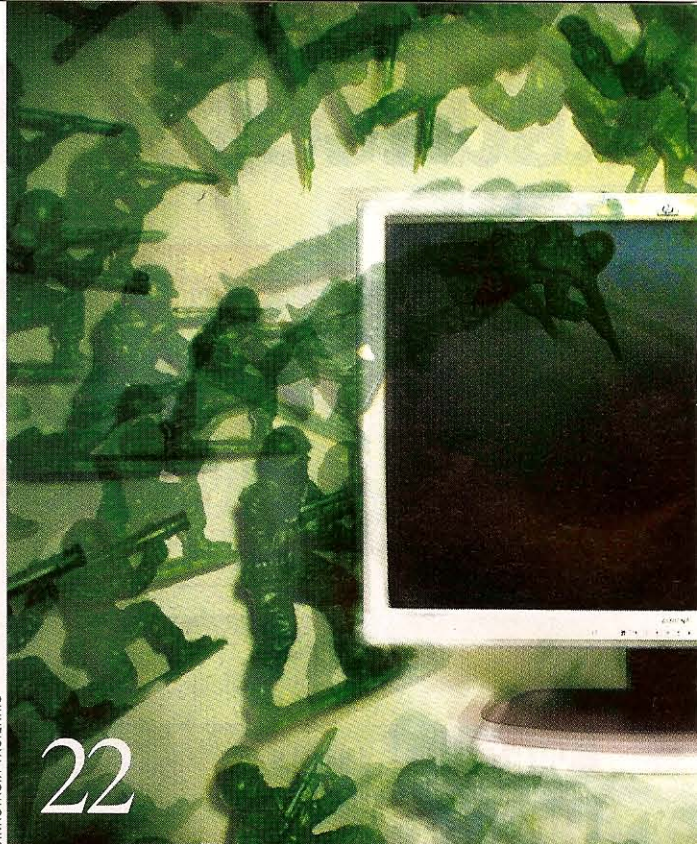


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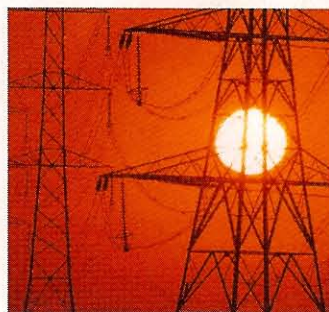
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ANASTASIA VASILAKIS



Dossier

Name: Robert Faludi

Title: Adjunct professor

Organization: New York University

Location: Manhattan

Most interesting technology:
"The world is full of gadgets, but what I'm really impressed with is tomato seeds. Press one seed into wet soil, and up pops a contraption that turns sunlight into food. It's humbling."

Philosophy in a nutshell:
"Technology succeeds when it lets humans be more human."

People he most admires:
"The Inuit, for respecting their environment while pressing the boundaries of survival."

Favorite New York restaurant:
Jimmy's No. 43

Favorite plant: Lithops, the "living stone"

Rob Faludi is a specialist in physical computing and networked objects. As a researcher in New York University's psychology department and Center for Neural Science, he has investigated the connections between visual perception, motor action and the physical environment.

You had your own company for 10 years in San Francisco. Why did you move back to New York and go into teaching? Couldn't get a decent slice of pizza. And I really missed winter. Mostly, though, I came back to New York to better understand people. My consulting company had been doing some cutting-edge work. In team meetings, we'd get embroiled in lengthy debates about how [a Web] interaction should proceed. When we finally put our creations in front of real users, they'd frequently breeze through the parts that we thought would be hard and then screech to a halt, completely bewildered by some choice that everyone on the development team had assumed would be obvious. I wanted to know what was going on. The answers would span science and design, so I returned to school for two master's degrees, one in cognitive psychology and one from NYU's Interactive Telecommunications Program. When it was all

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■ THE GRILL

Rob Faludi

The **networking visionary** talks about introducing your **toaster** to your **smoke alarm**, bonding with your **plants** and bringing the **outside** in.



“When that phone call or text message comes in from your plant, we’re hoping to precipitate a moment that you and your leafy friend can spend together.”

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done, ITP asked me to do some teaching. That’s turned out to be a terrific way to keep on learning.

Can you define “sociable objects” and describe how you became interested in creating them? Sociable objects are simply devices that share information with each other and with people. The well-socialized object knows when and how to share. It doesn’t bother you with questions it could answer on its own. It’s happy to socialize with the other devices nearby, requesting information and lending a hand when it can.

When I push [my toaster] lever down, if there’s a crumb stuck in the coils, it isn’t long before my fragile pre-coffee state is shattered by the piercing siren of my smoke detector. It doesn’t know about the toast, but really it should. If it were sociable, as soon as it detected particulate matter in the air, it would query the toaster to see if it had been activated. That would tell it that in all likelihood, it wasn’t detecting an unattended, middle-of-the-night fire but instead a benign morning meal. The price of low-power radio networking and the just-minted funding for

smart home energy networks makes this sociable smoke-detector scenario entirely within our reach. I want one.

Do your studies in psychology and neural science help you facilitate different ways of human-object communication? Oh, it’s all about the people for me! I deeply respect engineering and computer science because they are fundamentally human endeavors. What I aim to do is take the magic they produce to the next level and find ways that new technologies can engage us and enrich our interactions.

Can you briefly touch on the concept of mesh networking? Broadly speaking, a mesh network is a collection of devices that are all connected to each other both directly and indirectly. Any one device can act as both a node and a router for other nodes. Together, the devices create a robust communications structure, one that adapts fluidly when a new device enters the network or another one is removed or fails. There are over a hundred ad hoc routing protocols for these networks, but the basic idea is a kind of egalitarian structure. It’s terrific for making robust and highly flexible local networks — kind of like a party where everyone is making introductions to everyone else and happily chatting away, changing their layout as people enter and leave the room. On the other hand, it’s an inappropriate structure for very large networks because the overhead of routing everything to everyone rapidly becomes unmanageable. So usually network architects use mesh at a local level and then route to a more hierarchical topology for internetworking. That way, the local fetes can stay fun without devolving into a shouting match.

Can that type of networking be applied to solving current environmental problems? I’ve been developing networks for home energy monitoring with a start-up called GroundedPower Inc. We’re rolling out a pilot project for Cape Light Compact, an energy services organization responsible for efficient and environmentally responsible power on Cape Cod and Martha’s Vineyard. We’re creating a way for their customers to see exactly how much energy they’re using in real time. The pilot project will look at how and to

what extent consumers respond to real-time information about electricity consumption and how their conservation actions are affected by being part of a community network. This is a great example of how objects and networks can have a real impact on not just individuals’ lives, but on the way we impact the world as a whole. If we can get enough people monitoring their power consumption and leverage that effectively into behavior change, then perhaps we can keep the oceans where they are. I like sushi, but I don’t want to live with it.

You also co-created a human-plant communication system. How does it work? The Botanicalls project aims to forge a connection between people and nature. Botanicalls is about helping people notice the other living things around them. When that phone call or text message comes in from your plant, we’re hoping to precipitate a moment that you and your leafy friend can spend together. So the technology of sensing soil moisture, connecting to an online message generator and triggering notifications is really about momentarily fracturing the grip of gadgets and nudging a person back toward the tiny bit of wild that shares their space.

And that brings up Wild Light. Tell me about that. Wild Light springs from the same conceptual source as Botanicalls, and it’s a very straightforward system. The idea is to bring the rhythms of organic daylight into dark and windowless spaces. In urban and office environments, we frequently cut ourselves off from the reality of the day so much that when finally venturing outside, we’re shocked to discover bright sunshine or maybe torrential storms. The basic Wild Light setup is simply a lamp with a networked connection to an outdoor solar sensor. This allows the indoor fixture to directly reproduce real-time natural lighting, on a scale where if a cloud flits across the sun, your Wild Light lamp will momentarily dim and brighten. It’s harnessing technology to reconnect us to nature’s capriciousness. I think those exposures are good for the soul.

— Interview by **Sara Forrest**, a freelance photographer and writer in New York
(saraforrestphoto@gmail.com)