



The Grandfather of Google Glass

Alex Pentland, often called the grandfather of Google Glass, and cited by *Forbes* in 2012 as one of the seven most powerful data scientists in the world, wears so many hats it boggles the mind. Pentland directs both the [Human Dynamics Laboratory](#) and the [Media Lab Entrepreneurship](#) program at the Massachusetts Institute of Technology. The lab pioneered the idea of society enabled by Big Data and has developed reality mining, which uses mobile phone data to extract patterns to predict human behavior. He also is a driving mind behind organizational engineering, biometrics, and wearable computing.

How has your work and educational background, along with your interests, led to your present roles?

I've always been interested in human-machine systems, ranging from cars with assisted driving to distributed organizations to governments and society generally. I was also lucky enough to get a solid mathematical, signal processing, and machine learning background early on. As an undergraduate at the University of Michigan I was put in charge of a NASA project building systems for space satellite remote sensing of the environment. My first job was counting Canadian beavers from space.

What's been your most challenging project to date?

The current problem of how our society promotes greater sharing of ideas and information while at the same time protecting personal privacy and security. This is the focus of the discussion group I co-led at Davos for the World Economic Forum in 2011 and it constitutes much of my research here at MIT and research elsewhere in the world. Our current best solution is to give individuals greater control over information that is about them through the mechanism of personal data stores (PDS). Our openPDS solution is what MIT and the European Institute of Technology are currently experimenting with to address the thorny sharing versus privacy problem.

Do you wear Google Glass?

I'm often called the grandfather of Google Glass so I sort of have to, don't I? To not wear Glass would be letting down both the [wearables](#) community and my former students.

Can you talk about a few projects at the Human Dynamics Lab you're involved with? What, for instance, is reality mining? What is the idea of a society enabled by Big Data?

We have entered an age where our current systems—power, transportation, governance, health—are all failing because they're built on static designs of the 1800s. At the same time we suddenly have digital data about almost everything; breadcrumbs thrown off by cell phones, credit cards, car transponders, and such. We use reality mining to analyze that data and build dynamic, predictive systems that are far more efficient and robust than current systems. Such dynamic systems can address the grand challenges facing our society. But to achieve that promise we must also solve the problems of privacy and government surveillance.

Of what in your life are you most proud, workwise?

I have always been able to rise above the ongoing research dialogue and ask, "Why are we focusing on particular questions?" and then offer more fundamental and productive questions for the community to pursue. This has let me change the direction of several research communities:

imaging, wearable computing, transportation, technology for development, multimedia, health sensing, and social networks, among others.

When you were a kid, what did you want to be when you grew up?

Hari Seldon, a fictional character who built mathematical models of society's evolution. In Isaac Asimov's *Foundation* trilogy, Hari was able to guide the human race to salvation by use of small, exactly timed nudges.

Anything else you want to add?

My new book, *Social Physics* (Penguin Press), came out in February 2014, and I think it is the nearest thing yet to a mathematical, practical theory of human society. Anyone with a technical bent who is interested in human-machine systems, privacy, or building better organizations will probably really enjoy it.

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