
CONCEPTUAL ORIENTATION

I am interested in transdisciplinary and cross-sectoral approaches to social, economic, and political questions. Much of my research is focused on issues at the intersection of “economics,” “culture,” “technology,” and “politics,” and my approach consists in a mixed-method, multi-scalar, multi-perspectival analysis of systems and situations. I am comfortable and conversant with both quantitative approaches from engineering and economics and qualitative approaches from political theory, philosophy, and the humanities, and am always interested in learning about new analytical perspectives, techniques, frameworks, and approaches. I am firmly convinced that all useful analysis serves action in the world, and my research and practice are guided first and foremost by the questions “What should we do in the world?” “Why?” “How shall we do it?” More concretely, my current interests and work lie at the intersection of environmental sustainability, economic and political justice, and information technology.

EDUCATION

PhD, Informatics, University of California, Irvine. Degree expected June 2014.

Master of Science in Engineering (Arts Computation Engineering), University of California, Irvine.
Thesis: *Experiments in critical mathematical modelling*.
Degree granted September 2009.

Bachelor of Science in Applied Mathematics, Columbia University in the City of New York.
Degree granted May 2007.

PEER-REVIEWED WORKSHOP PROCEEDINGS

Silberman, M. S., 2008: Designing economic interactions. Presented at CHI: The Association for Computing Machinery Conference on Human Factors in Computing Systems, in the workshop “Defining the role of HCI in the Challenges of Sustainability,” April 4 - 9, 2009.

TEACHING EXPERIENCE

Reader, ICS 5: Environmental Issues in Information Technology, UC Irvine
March – June 2009
Worked with another reader to grade assignments, give feedback, and support student projects.

Instructor, Physics and Astronomy, UC Irvine Gifted Students Academy, Irvine, USA
May – August 2006
Designed and taught a series of five weeklong courses in physics and astronomy for middle-school-aged students.

PRESENTATIONS

Nov 12 – 14, 2009 (upcoming): The Internet as Playground and Factory, Eugene Lang College, New School for Liberal Arts, New York, NY. “Turkopticon.” With Lilly Irani.

Jun 10, 2009: 1st Mechanical Turk Meetup, Dolores Labs, San Francisco, CA. “Turkopticon. The ‘sourced’ crowd is made of people: what that means for *what* and *how* we build.” With Lilly Irani.

Mar 7 – 9, 2008: IMPACT: National Student Conference on Service, Advocacy, and Social Action, Northwestern University, Boston, MA. Presented a 90-minuted workshop, “Technology for organizing: some information architectures for student activists.”

RESEARCH WORK

Software: *Turkopticon* (October 2008, ongoing). turkopticon.differenceengines.com. A Firefox extension which allows workers on Amazon's Mechanical Turk platform to rate employer quality.

Paper: Designing economic interactions (October 2008). Case study in how technical details of interface and database encode different decision making logics in software platforms mediating economic interaction.

Paper: Two short essays on deliberation (May 2008). "Embodied deliberation" argues that a coherent theory of deliberation requires a biological theory of mind. "Horizontality, organized networks, academic freedom" offers up a mode of institutional organization "natural" to information technologies as a potential approach to the crisis of "academic freedom."

Paper: Collective intelligence and information architecture (May 2008). Begins an exploration of the long-term implications and potentials of information technologies for social, political, and economic organization, with a particular view toward questions of "sustainability."

Paper and software: Modelling transportation networks with Octave (May 2008). A software package and detailed documentation for modelling transportation networks in the Octave programming language/environment.

Paper: Beyond solved problems: Toward open-problem solving and independent problem-framing in collective intelligences (March 2008). An exploration of the limitations and potentials of "collective intelligences" in networked alternate reality games.

Paper: The winter of parking dangerously (March 2008). A first-person exploration of the relationship between mathematical modelling of human behavior, incentives, surveillance, and lived experience in designed systems.

Paper: Information architecture for sustainable development (June 2007). Explores the implications and benefits to "sustainable development" work of analyzing organizational structure along "information-architectural" lines. With T. Heikkila, Columbia University School of International and Public Affairs.

Paper and software: *kllbx*: A generalized, extensible discrete-time water balance model (May 2007). (Software in MATLAB.) With G. D. Kelly, Columbia University Department of Civil Engineering and Engineering Mechanics.

Paper and software: A discrete-time extensible integrated simulation of global water demand and food trade (May 2007). (Software in MATLAB.) With D. Pontoriero, Columbia University Department of Applied Mathematics, and T. Siegfried, Columbia University Earth Institute.

Paper: Constructing the rural-urban fabric: concept for a computational agent-based network model (December 2006). Suggests that a Lagrangian approach to modelling economic activity and poverty within "economic catchments" could resolve some of the difficulties around theorizing "rural-urban linkages." Written for Pedro Sanchez, Cheryl Palm, and Vijay Modi, Columbia University Earth Institute.

Paper: Connecting Kigali: The Northern Transport Corridor and railway development in East Africa (December 2006). Reviews the prospects for a public-private partnership in railway development along the Northern Transport Corridor in East Africa. Written for Pedro Sanchez, Cheryl Palm, and Vijay Modi, Columbia University Earth Institute.

Paper: Optimizing a handmove sprinkler system (February 2006). (Software in MATLAB.) With D. Pontoriero and J. Jailer-Coley, Columbia University Department of Applied Mathematics. Entry for the 2006 Mathematical Contest in Modeling; received a ranking of "Meritorious," or top 18% of entries from 800 international teams.

Software for analyzing effects of wind-speed parametrization on gas exchange at the air-sea interface in general circulation models. (July 2006) (In MATLAB.) With Chris Zappa and Samar Khatiwala, Lamont-Doherty Earth Observatory, Columbia University Earth Institute.

Paper and fieldwork: Northern subsurface countercurrent in the Central Equatorial Pacific (May 2005). Collected and reported oceanographic data. In association with the Sea Education Association.

PUBLICATIONS IN POPULAR PRESS

Feb 2008: Published an 800-word analysis of the technocultural orientation and implications of Liam Kyle Sullivan's video "Text Message Breakup" in the *New University*.

Jan – Apr 2007: Published a series of six biweekly 800-word columns, "Un/sustainable futures," focusing on the intersection of sustainability, environmental economics, and information technology, in the *Columbia Daily Spectator*: "Future-forward," "Infra-everything," "Infrastructural adjustments," "Externalize this," "Transparentization and its discontents," and "The end of the beginning."

NON-RESEARCH WORK

Developer and Designer, Humanity in Action

New York, USA

December 2008 – April 2009

Humanity in Action works to build global leadership, defend minorities and improve human rights by inspiring, engaging, and empowering the human rights leaders of the future. The developer/designer develops, designs, deploys, and maintains the online application system.

Information Architect, StartingBloc NFP

New York, USA

July 2007 – March 2009

StartingBloc is a not-for-profit which hosts educational conferences and events to educate, empower, and connect emerging leaders to effect positive social change across sectors. Its full-time staff of two manages a rapidly growing, global network of over 1000 fellows, alumni, supporters, and other stakeholders who interact and collaborate on projects relevant to StartingBloc's mission. The information architect develops and maintains custom and off-the-shelf internal and public-facing software which facilitates this communication and collaboration.

Editorial Webmaster, *New University*, Irvine, USA

September 2007 – March 2009

The *New University* is the student-run weekly newspaper of the University of California, Irvine. The editorial webmaster builds, maintains, and populates the custom-built web database application that makes the newspaper's content available online.

Information Architect, Center for Climate Systems Research, Columbia University and NASA Goddard Institute for Space Studies, New York, USA

June – August 2007

Interviewed stakeholders and developed a web database application for internal and public-facing use to store publications and other information pertaining to the ongoing research work of the scientific staff.

Developer and Designer (Informal, Volunteer)

June 2007

Built and deployed, in 96 hours, a web-based auction site to manage an internal auction at JP Morgan to raise funds for the Fresh Air Fund, a nonprofit that organizes summer vacations to the country for children from disadvantaged communities.

Print Designer (Volunteer)

February 2007

Designed print layout for Issue 2 of *Outlet*, a student-run sex magazine at Columbia University. Featured in "Campus Exposure," *New York Times Magazine*, March 4, 2007.

SKILLS

Web development and programming

- Extensive experience with Rails, Ruby, MySQL, XML, HTML, and CSS.
- User-level command-line experience with Linux systems.
- Experience programming Grasemonkey-based Firefox extensions in JavaScript.
- Some experience programming simple applications with Java and C++.
- Some experience programming interactive visualization applications with Processing.
- Extensive experience with MATLAB and Octave for mathematical modelling and scientific computation.

Standard software

- Extensive experience using Adobe Photoshop and InDesign/PageMaker for web and print layout/graphic design.
- Extensive experience with Microsoft Office suite, including some mathematical modelling with Excel.

Miscellaneous

- Some experience with basic circuit design and construction with microprocessors.
- Some experience with basic mechanical design and construction.
- Proficient in written and spoken Spanish.

REFERENCES

Available on request.