

Scott D. Mainwaring, Ph.D.
scottmainwaring@gmail.com

EDUCATION

Stanford University

Ph.D., Cognitive Psychology
(field designation: Cognitive Science)

Harvard University

A.B., Computer Science

EMPLOYMENT

2014–present **Independent Researcher and Lecturer**

I conduct and manage multi-method, multi-stakeholder research, design, and analysis from a critical, systemic, and lived-experience framework. I have expertise in in-depth, one-on-one, ethnographically informed interviewing, both in person and online. I've particularly focused on the relationship of people with money and payments as they live their financial lives, to identify barriers to financial inclusion and opportunities for technological innovation. As a lecturer I teach what I practice: human-centered design, critical HCI, research methods, and particularly their theoretical foundations.

2018–2020 **Affiliate Assistant Professor and Part-Time Lecturer, U. of Washington**

Taught masters-level course on Theoretical Foundations of Human Centered Design and Engineering (HCDE 501), Fall 2018, Spring 2019, Fall 2020. (Support lecturer for Prof. Beth Kolko in teaching HCDE 501, Spring 2018.)

2016–2017 **Adjunct Assistant Professor, Portland State University**

Taught graduate-level course on User Centered Innovation (Engineering and Technology Management 556/656), Winter 2017.

2012–2013 **Co-PI, Intel Science and Technology Center (ISTC) for Social Computing**

Defined, launched, and directed a multidisciplinary distributed research center exploring the social and cultural construction of information and communication technologies and new media. The ISTC had a \$2.5 million annual budget and tied together 21 faculty, 6 postdocs, and 22 doctoral students in Informatics, Anthropology, Media Studies, and other disciplines across the University of California, Irvine (the center's hub); Indiana University; Cornell University; Georgia Tech; and New York University. Worked with academic and Intel stakeholders to define and communicate an ambitious set of research themes to foster collaboration within and across campuses and to represent the center's work externally. Created online and face-to-face venues for graduate students to present work-in-progress and build community. Managed relations with sibling ISTCs. Oversaw operations, working closely with co-PIs at UC Irvine and co-chairing biweekly coordination teleconferences.

2005–2006 **Acting Director, People and Practices Research Group (PaPR), Intel Corp.**

Responsible for day-to-day operations for 12-month period. Managed six direct reports. Conducted candidate searches for two research scientist positions, and aided

in search for permanent lab director. Helped establish and oversee contracts with external faculty as consultants and research collaborators. Reported on research findings and activities on monthly basis to Intel stakeholders; represented PaPR at corporate reviews and meetings.

2002–2013 Senior Research Scientist, Intel Corp.

Led research projects on large-scale broadband adoption, resistance to ubiquitous infrastructure, home architecture and within-home mobility, digital wallets and urban mobility, personal digital money and mobile money innovation, and social forces in ICT-based development projects. Conducted ethnographic fieldwork in the US, UK, Japan, China, South Korea, Morocco, Kenya, and South Africa. Coordinated multiyear grant program supporting academics exploring community technologies, privacy, and trust. Collaborated across research labs and business units to produce corporate-level strategy and planning documents, and to conduct joint research. Co-organized workshops at Intel, UC Irvine, and the CHI and Ubicomp conferences on a range of topics. Participated in the annual Intel Developer Forum, co-teaching a tutorial on mobile ethnography, presenting research on the future of payment systems and virtual currencies, and helping stage a large-scale participatory demo of augmented reality applied to personal photography. Generated product concepts, invention disclosures, and patents. Helped in formation of agenda-setting research themes tying together PaPR and other units of Intel Research. Supervised PhD candidates in ethnographic internship projects on forms of mobility (separate projects looked at residential, urban, and vehicular mobility) and on online gaming culture and currencies in China.

2000–2002 Research Scientist, Intel Corp.

Led ethnographic research projects on broadband connected homes, personal digital media, and home media server field trials. Collaborated with market researchers, designers, and engineers to provide user experience guidance on product and service concepts and strategies.

1994–2000 Member, Research Staff, Interval Research Corp.

Ethnographer and designer within a vibrant community of researchers, technologists, artists, and entrepreneurs, funded by Paul Allen to explore the personal potential of technology. Research foci included online communities, information appliances, home media spaces, demographic opportunities around aging Baby Boomers, and interactive television services. Awarded patents on shared media-space systems. Served on internal institutional review board for human studies.

1991–1993 Program Coordinator, Symbolic Systems Program (SSP), Stanford

Responsible for day-to-day operations for interdisciplinary undergraduate major in cognitive science, a collaboration between the Philosophy, Linguistics, Psychology, and Computer Science departments.

PUBLICATIONS

* = peer reviewed

- Mainwaring, S.D. and Wrapp, M.K. 2021. ***Opportunities and Risks of Conversational AI for Credit Unions: Empathy and Intimacy in Automated Financial Customer Service.*** Research report, Filene Research Institute.
- * Nelms, T. C., Maurer, B., Swartz, L., & Mainwaring, S.D. 2018. **Social payments: Innovation, trust, bitcoin, and the sharing economy.** *Theory, Culture & Society*, 35 (3), 13–33.
- Mainwaring, S.D. 2017. **Dongles.** In W.M. Maurer & L. Swartz (Eds.), ***Paid: Tales of Dongles, Checks, and Other Money Stuff.*** MIT Press.
- Mainwaring, S.D. and Lee, C.P. 2017. **Turnover and the Model of Coordinated Action (MoCA)** [poster]. In *CSCW '17 Companion* (CSCW 2017).
- * Shklovski, I., Mainwaring, S.D., Hrund Skúladóttir, H., and Borgthorsson, H. 2014. **Leakiness and creepiness in app space: Perceptions of pivacy and mobile app use.** In *Proc. ACM Conf. Human Factors in Computing Systems* (CHI 2014).
- Mainwaring, S.D. 2014. Monetary aesthetics and HCI. In *#CHIMoney: Financial Interactions, Digital Cash, Capital Exchange and Mobile Money.* Workshop at CHI 2014.
- Mainwaring, S.D. and P. Dourish, P. 2012. ***The Intel Science and Technology Center for Social Computing.*** Intel Labs white paper.
- * Dourish, P. and Mainwaring, S.D. 2012. **Ubicomp's colonial impulse.** In *Proc. Ubiquitous Computing Conf.* (UbiComp 2012), 133–142.
- * Maurer, B. and Mainwaring, S.D. 2012. **Anthropology with business: Plural programs and future financial worlds.** *Journal of Business Anthropology*, 1 (2), 177–196.
- * Kuriyan, R., Nafus, D., and Mainwaring, S. 2012. **Consumption, technology, and development: The "poor" as "consumer".** *Information Technologies & International Development*, 8 (1), 1–12.
- Mainwaring, S.D. 2012. From Casablanca to Consumerization: Reflections on "Technology for Families" Research. In *Technology for Today's Family.* Workshop at CHI 2012.
- * Kuriyan, R., Kitner, K., Mainwaring, S., and Nafus, D. 2011. **Cracking representations of the emerging markets: It's not just about affordability.** In *Proc. Ethnographic Praxis in Industry Conf.* (EPIC 2011), 322–336.
- Wang, Y. and Mainwaring, S. 2010. **Incentives in the wild: Leveraging virtual currency to sustain online community.** In *Proc. iConference 2010.*
- Kuriyan, R., Kitner, K., Mainwaring, S., and Nafus, D. 2010. **Reassessing ICTs and Development: The Social Forces of Consumption.** Research report released at 2010 World Congress on Information Technology (WCIT 2010).
- Mainwaring, S. 2010. **Real money and its alternatives.** In Cliver, M. (Ed.) ***New Organizational Models: Open-Source Financial Services Research*** (pp. 42–43). Released at Ethnographic Praxis in Industry Conference (EPIC 2010).

- * Nafus, D. and Mainwaring, S. 2010. **Rural broadband expansion in the United States: Citizen perception as a social process.** In *Proc. Telecommunications Policy Research Conf.* (TRPC 2010).
- * Nafus, D., De Paula, R., Kitner, K., Kuriyan, R., and Mainwaring, S. 2009. **Consumerization and renewing People and Practices Research.** In *Proc. Ethnographic Praxis in Industry Conf.* (EPIC 2009), 256–267.
- * Lindtner, S., Mainwaring, S.D., Dourish, P., and Wang, Y. 2009. **Situating productive play: Online gaming practices and *guanxi* in China.** In *Proc. IFIP Conf. Human-Computer Interaction* (INTERACT '09), 328–341.
- Maurer, W.M. and Mainwaring, S.D. 2009. ***The value of mobile banking, models, and methods: Can you hear me now?*** Paper delivered at the 108th Annual Meeting of the American Anthropological Association, Philadelphia, PA, December 3, 2009.
- Lindtner, S., Mainwaring, S.D., and Anderson, K. 2009. Facing the Crowd: Cocooning and Leveling Up in China's Urban Sprawls. In *Crowd Computer Interaction*. Workshop at CHI 2009.
- * Mainwaring, S.D., March, W., and Maurer, B. 2008. **From *meiwaku* to *tokushita*: Lessons for digital money design from Japan.** In *Proc. ACM Conf. Human Factors in Computing Systems* (CHI 2008), 21–24. [Best paper/note award]
- * Wang, Y. and Mainwaring, S.D. 2008. **“Human-Currency Interaction”: learning from virtual currency use in China.** In *Proc. ACM Conf. Human Factors in Computing Systems* (CHI 2008), 25–28.
- * Lindtner, S., Nardi, B., Wang, Y., Mainwaring, S., Jing, H., and Liang, W. 2008. **A hybrid cultural ecology: World of Warcraft in China.** In *Proc. ACM Conf. Computer Supported Cooperative Work* (CSCW 2008), 371–382.
- * Brewer, J., Mainwaring, S., and Dourish, P. 2008. **Aesthetic journeys.** In *Proc. ACM Conf. Designing Interactive Systems* (DIS 2008), 333–341.
- Mainwaring, S.D. and George, C. 2008. *Navigating Future Moneyscapes* (video and booklet). Distributed at the Intel Technology and Research Pavilion, Technology Showcase, Intel Developers Forum (San Francisco, 19–21 August, 2008).
- Wang, Y. and Mainwaring, S.D. 2008. ***Ethnography at play: An exploratory case study of Chinese users’ experience in and around online games.*** Paper presented at CHI 2008 Workshop on Evaluating User Experiences in Games.
- Lindtner, S., Mainwaring, S., and Wang, Y. 2008. ***New frontier of guanxi: Online gaming practices in China.*** Available at SSRN 1317472.
- * Bassoli, A., Brewer, J., Martin, K., Dourish, P., and Mainwaring, S. 2007. **Underground aesthetics: Rethinking urban computing.** *IEEE Pervasive Computing*, 6(3), 39–45.
- * Woodruff, A., Anderson, K., Mainwaring, S.D., and Aipperspach, R. 2007. **Portable, but not mobile: A study of wireless laptops in the home.** In *Proc. Pervasive Computing Conf.* (Pervasive 2007), 216–233.

- Ackerman, M. and Mainwaring, S.D. 2005. **Privacy issues and human-computer interaction.** *Computer*, 27 (5), 19–26. (Also appears in Cranor, L.F. and Garfinkel, S. (Eds.) *Security and Usability: Designing Secure Systems That People Can Use* (Ch. 19, pp. 381–400). O'Reilly Media, 2005.)
- * Mainwaring, S.D., Anderson, K., and Chang, M.F. 2005. **Living for the global city: Mobile kits, urban interfaces, and ubicomp.** In *Proc. Ubiquitous Computing Conf.* (UbiComp 2005), 269–286.
- * Mainwaring, S.D. and Woodruff, A. 2005. **Investigating mobility, technology, and space in homes, starting with “great rooms”.** In *Proc. Ethnographic Praxis in Industry Conf.* (EPIC 2005), 188–195.
- * Shklovski, I. A. and Mainwaring, S.D. 2005. **Exploring technology adoption and use through the lens of residential mobility.** In *Proc. ACM Conf. Human Factors in Computing Systems* (CHI 2005), 621–630.
- * Mainwaring, S.D., Anderson, K., and Chang, M.F. 2005. **What’s in your wallet?: Implications for global e-wallet design.** In *Extended Abstracts on Human Factors in Computing Systems* (CHI EA 2005), 1613–1616.
- * Beckwith, R. and Mainwaring, S. 2005. **Privacy: Personal information, threats, and technologies.** In *Proc. Intl. Symposium on Technology and Society* (ISTAS 2005), 9–16.
- Woodruff, A. and Mainwaring, S. 2005. **Everyday practices in great rooms.** Paper presented at UbiComp 2005 Workshop: Situating Ubiquitous Computing in Everyday Life; Bridging the Social and Technical Divide.
- Okabe, D., Anderson, K., Ito, M., and Mainwaring, S.D. 2005. **Location-based moblogging as method: New views into the use and practice of persona, social, and mobile technologies.** Paper presented at the Hungarian Academy of Science conference: *Seeing, Understanding, Learning in the Mobile Age, the 2005 Intl. Conf.* (Budapest, Hungary).
- * Mainwaring, S.D., Anderson, K., and Chang, M.F. 2004. **Infrastructures and their discontents: Implications for ubicomp.** In *Proc. Ubiquitous Computing Conf.* (UbiComp 2004), 418–432.
- * Sherry, J., Mainwaring, S.D., Burrell, J., Beckwith, R., and Salvador, T. 2004. **“This all together, hon’?”: UbiComp in non-office work environments.** *Proc. Ubiquitous Computing Conf.* (UbiComp 2004), 179–195.
- Anderson, K., Chang, M., and Mainwaring, S. 2004. Device ensembles. *Computer*, 37 (12), 58–61.
- * Mainwaring, S.D., Tversky, B., Ohgishi, M., and Schiano, D. J. 2003. **Descriptions of simple spatial scenes in English and Japanese.** *Spatial Cognition and Computation*, 3, 3–42.
- * Hindus, D., Mainwaring, S.D., Leduc, N., Hagström, A.E., and Bayley, O. 2001. **Casablanca: Designing social communication devices for the home.** In *Proc. ACM Conf. Human Factors in Computing Systems* (CHI 2001), 325–332.
- * Tversky, B., Lee, P., and Mainwaring, S. 1999. **Why do speakers mix perspectives?** *Spatial Cognition and Computation*, 1, 399–412.

- * Ackerman, M.S., Starr, B., Hindus, D., and Mainwaring, S.D. 1997. **Hanging on the 'wire: A field study of an audio-only media space**. *ACM Transactions on Computer-Human Interaction*, 4, 39–66.
- * Hindus, D., Ackerman, M.S., Mainwaring, S., and Starr, B. 1996. **Thunderwire: A field study of an audio-only media space**. In *Proc. ACM Conf. Computer Supported Cooperative Work (CSCW 1996)*, 238–247.
- Mainwaring, S.D., Tversky, B., and Schiano, D. 1996. Effects of task and object configurations on perspective choice in spatial descriptions. *AAAI Spring Symposium*, 56–67.
- Mainwaring, S.D. 1996. **Compilation and use of a World-Wide Web index of cognitive and psychological science resources**. *Behavior Research Methods, Instruments, & Computers*, 28, 152–155.
- Mainwaring, S.D. 1994. Reference Points and the Structure of Cognitive Maps. Ph.D., Stanford University (Barbara Tversky, advisor).
- Mainwaring, S.D. 1993. Distinguishing the linguistic from the sublinguistic and the objective from the configurational. *Behavioral and Brain Sciences*, 16, 248–249. Commentary on target article by B. Landau and R. Jackendoff, "What" and "where" in spatial language and spatial cognition.
- Kosslyn, S.M., Mainwaring, S.D., & Corcoran, T.A. 1985. Connectionism: There's something to it. *Behavioral and Brain Sciences*, 8, 297. Commentary on target article by J.A. Feldman, Four frames suffice: A provisional model of vision and space.

COURSES TAUGHT

- Cooperatives and Sociotechnical Design** (undergraduate and graduate Directed Research Group with Charlotte Lee). Human Centered Design and Engineering 496/596, College of Engineering, University of Washington, Seattle, WA. Spring 2021.
- Theoretical Foundations of Human Centered Design and Engineering** (graduate level). Human Centered Design and Engineering 501, College of Engineering, University of Washington, Seattle, WA. Fall 2018, Spring 2019, Fall 2020.
- Creepy Technology** (undergraduate and graduate Directed Research Group with Charlotte Lee). Human Centered Design and Engineering 496/596, College of Engineering, University of Washington, Seattle, WA. Winter 2019.
- User Centered Innovation** (graduate level). Engineering and Technology Management 556/656, Maseeh College of Engineering and Computer Science, Portland State University, Portland, OR. Winter 2017.
- Dealing with People Coming and Going: Turnover in Coordinated Action** (undergraduate Directed Research Group with Charlotte Lee). Human Centered Design and Engineering 496, College of Engineering, University of Washington, Seattle, WA. Fall 2016.

WORKSHOPS ORGANIZED

- Maurer, W. and Mainwaring, S.D. 2008. **Everyday Digital Money**. Two-day workshop at UC Irvine, sponsored by UC Irvine Dept. of Anthropology and Intel PaPR.
- Elliott, A., Mainwaring, S., Sengers, P., and Woodruff, A. 2006. **Nurturing Technologies in the Domestic Environment: Feeling Comforted, Cared for, and Connected at Home**. Workshop at ACM Ubicomp 2006 (Orange County, CA).
- Acquisti, A., Canny, J., Hong, J., Langheinrich, S., and Mainwaring, S.D. 2005. Ubicomp Privacy: Privacy in Context. Workshop at ACM Ubicomp 2005 (Tokyo, Japan).
- Canny, P., Dourish, P., Mainwaring, S., and Jiang, X. 2003. Ubicomp Communities: Privacy as Boundary Negotiation. Workshop at ACM Ubicomp 2003 (Seattle, WA).
- Mainwaring, S.D., O'Brien, J., Hughes, J.A., and Lutters, W.G. 1997. Computer Support for Home Life: CSCW & Domestic Environments. Workshop at ECSCW 1997 (Lancaster, UK).

TALKS

- ELIZA and Personhood*. Symposium: The Human Face of Artificial Intelligence: Infrastructures, Narratives, Ethics. UC Irvine School of Social Sciences and School of Law, October 17, 2019.
- Money, Trust, and Inclusion*. Oregon Connections Telecommunications Conference: Digital Inclusion, session on Blockchain Technologies and Crypto Currencies, Hood River, OR, October 18, 2018.
- Designing Policies and Regions*. Human Computer Interaction Consortium, Pajaro Dunes, CA, June 27, 2017.
- Human-Centered Computing for the 21st Century* (Invited keynote). International Conference on Human-Centered Computing (HCC 2014), Phnom Penh, November 28, 2014.
- HCI's Evolving Relationships to Data*. Human Computer Interaction Consortium, Asilomar, CA, October 24, 2013.
- Datafication, Formalization, and Empowerment*. Claro Partners Symposium: The Informal Economy, Barcelona, October 12, 2012.
- From Human-Computer Interaction to Social Computing*. CalIT2 Igniting Technology: Understanding a Digitized Life event, UC Irvine, May 30, 2012.
- Technology and the Creation of Consumers*. Sino European Usability Center, Dalian Maritime University, Dalian, China, July 24, 2009.
- Digital Money: Engaging Potential for Personal Empowerment* (with Hsain Ilahiane). In panel on New Directions in Engaged Anthropology: Technologies, Empowerment, and Sustainability, Memphis, TN, March 26, 2008.
- What's Personally Empowering about Digital Money?* Intel Research Annual Symposium, Napa, CA, August 10, 2007.

Researching People and Practices for Technology Development (with Hsain Ilahiane). Centre de Recherche et des Sciences Sociales, Université Hassan II, Casablanca, Morocco, December 6, 2006.

Home Lives and Home Technologies. An Ethnographic Perspective. Digital Home Seminar Series, Intel Research Berkeley and UC Berkeley, April 12, 2005.

Trust and Identity in Being On and Off the Grid(s) (with Michele Chang). In panel on Trusted Anthropology, Society for Applied Anthropology Annual Meeting, Dallas, TX, April 3, 2004.

Design Ethnography at Intel: Expanding and Grounding Imagination for Future Computing Value. Computer Science Seminar, Oregon State University, January 23, 2003.

Collections and Collecting in the Home. 18th Annual HCIL Symposium, U. Maryland, May 31, 2001.

Collecting People, Collecting Practices. Second Human-Centered Product Innovation Conference, Intel Oregon, May 2, 2001.

PATENTS

Display of digital information content and method of selection. Mainwaring, S.D. and Brooke, T.L. US Patent 7240333, 2007, Intel Corporation (2001).

Method and apparatus to select content. Barile, S.D., Bell, G., Mainwaring, S.D., and Brooke, T.L. US Patent 6831570, 2004, Intel Corporation (2001).

Method and apparatus for sending presence messages. Hindus, D., Brechin, E., Dorogusker, J.L., Hagström, A.E., Mainwaring S.D., Bayley, O., Moeslinger, S., Burns, C., Jackson, D.C., Guilhamet, S., Fogg, B.J., White, S.M. US Patent 6956497, 2005, Vulcan Patents LLC (1998). Included in US Patent 8509137, 2013, Interval Licensing LLC (2011).

Method and apparatus for sending and receiving lightweight messages. Mainwaring, S.D., Hindus, D., Mogensen, C. and Burns, C. US Patent 6351271, 2002, Interval Research Corporation (1998).

Variable bandwidth communication systems and methods. Hindus, D., Mainwaring, S., Pedersen, E., White, S.M., and Gaver, W. US Patent 6282206, 2001, Interval Research Corporation (1998). Included in US Patent 7953112, 2011, Interval Licensing LLC (2007) and US Patent 8416806, 2013, Interval Licensing LLC (2011).

INTERNS SUPERVISED

2008 Camellia George, California College of the Arts, *Navigating future moneyscapes*

2007 Yang Wang, UC Irvine, *Q Coins and the online gaming ecosystem in China*

2006 Johanna Brewer, UC Irvine, *The aesthetics of mobility in the London Underground*

2006 Shannon May, UC Berkeley, *ICTs in a rural Chinese village* (with J. Sherry and R. Beckwith)

2005 Peyina Lin, University of Washington, *Cars, privacy, and OnStar*

2004 Irina Shklovski, Carnegie Mellon University, *Role of mediated communication in coping with the stress of a long distance residential move*

PROFESSIONAL SERVICE

Reviewer for CHI, CSCW, DIS (Designing Interactive Systems), UbiComp, and EPIC (Ethnographic Praxis in Industry) conferences

External Advisory Board Chair, Institute for Money, Technology, and Financial Inclusion (IMTFI), UC Irvine, 2008–2016

Local Arrangements Chair, CSCW 2017

Program Committee member, DIS 2014 and DIS 2017

Area Chair (Interaction Beyond the Individual subcommittee), CHI 2013

Program Committee member, UbiComp 2013

Workshops Co-Chair, CSCW 2011

Participant in NSF Sponsored Workshop on Computing at the Margins, Georgia Tech, 2010

Publications Co-Chair, CSCW 2002

Electronic Publishing Chair, CSCW 1996, CSCW 1998, CSCW 2000

MEMBERSHIPS

ACM Special Interest Group in Human-Computer Interaction (SIGCHI)

EPIC – Ethnographic Practice in Industry

OTHER INTERESTS

I have a life-long interest in vexillology (the study of flags). Since 2018 I have served as editor of the only peer-reviewed scholarly journal in the field, ***Raven: A Journal of Vexillology***, published by NAVA, the North American Vexillological Association. I have two flag research publications in *Raven*:

* Mainwaring, S.D. 2021. **The rise of the American Thin Blue Line Flag**. *Raven: A Journal of Vexillology*, 28. [Best paper award, 2020 NAVA Annual Meeting]

* Mainwaring, S.D. 2020. **Which way forward? Directionality in flag perception and design**. *Raven: A Journal of Vexillology*, 27.

I am an avid amateur photographer, and frequently post on Instagram as **@notmannering**.