John C. Chuang

School of Information
University of California at Berkeley
102 South Hall #4600
Berkeley, CA 94720-4600
https://ischool.berkeley.edu/~chuang/

EDUCATION

Ph.D., Engineering and Public Policy, Carnegie Mellon University, December 1998
  Dissertation title: "Economies of Scale in Information Dissemination over the Internet"
  Chair: Marvin Sirbu. Committee: Alex Hills, Granger Morgan, Hui Zhang

M.S., Engineering and Public Policy, Carnegie Mellon University, May 1997

M.S., Electrical Engineering, Stanford University, June 1992

B.S., Electrical Engineering, *Summa cum laude*, University of Southern California, May 1991
  Salutatorian, Class of 1991
  Student President, USC Engineering Honors Program, 1990 – 1991
  Honor Societies: Tau Beta Pi, Phi Kappa Phi, Alpha Lambda Delta, Golden Key National Honor
  Society

ACADEMIC APPOINTMENTS

University of California, Berkeley:
  Professor, School of Information, 2010 – present
  Professor, Below-the-Line, Electrical Engineering and Computer Sciences, 2010 – present
  Associate Dean and Head of School, School of Information, July 2019 – October 2019
  Associate Professor, School of Information, 2005 – 2010
  Assistant Professor, Below-the-Line, EECS, 2003 – 2010
  Assistant Professor, School of Information Management and Systems, 1999 – 2005

Carnegie Mellon University:
  Post-Doctoral Fellow, School of Computer Science, January – June 1999. Advisor: Hui Zhang

ACADEMIC POSITIONS

Founding Director, BioSENSE Lab, 2015 – 2019
Senior Fellow, Berkeley Institute for Data Science (BIDS), 2014 – 2020

INDUSTRY POSITIONS

Co-Founder, boxbabble, 2007 – 2014
Member of Technical Staff, Silicon Graphics Inc., 1992 – 1995

AWARDS

Best Paper Award, **"Eliciting Values Reflections by Engaging Privacy Futures Using Design Workbooks"**, ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW), 2018

Best Student Paper Award, **"Exploring the Feasibility and Performance of One-Step Three-Factor Authentication with Ear-EEG"**, 5th International Conference on Physiological Computing Systems (PhyCS), 2018

Best Paper Honorable Mention Award, **"When BCIs have APIs: Design Fictions of Everyday Brain-Computer Interface Adoption"**, ACM Conference on Designing Interactive Systems (DIS), 2018.

Distinguished Faculty Award, School of Information, UC Berkeley, 2018

Distinguished Faculty Mentors Award – Nominee, UC Berkeley, 2018

Distinguished Faculty Mentors Award – Nominee, UC Berkeley, 2017

Distinguished Teaching Award, School of Information, UC Berkeley, 2011

Distinguished Teaching Award, School of Information, UC Berkeley, 2009

Distinguished Teaching Award, School of Information, UC Berkeley, 2006

Distinguished Faculty Mentors Award – Nominee, UC Berkeley, 2004

Best Paper Award, **"Resilient Data-Centric Storage in Wireless Sensor Networks"**, 4th International Conference on Mobile Data Management (MDM), 2003

Distinguished Teaching Award – Honorable Mention, School of Information Management & Systems, UC Berkeley, 2002

Distinguished Teaching Award, School of Information Management & Systems, UC Berkeley, 2001

Distinguished Teaching Award, School of Information Management & Systems, UC Berkeley, 2000

Hebert Toor Best Qualifier Paper Award, Department of Engineering and Public Policy, CMU, 1997

Council on Library and Information Resources A. R. Zipf Fellow in Information Management, 1997

Phi Kappa Phi Outstanding Freshman Award, USC, 1989

PUBLICATIONS

Listed in chronological order. Non-refereed publications are noted with an asterisk (*).

1. A. Ahi, A. Bomdica, G. Shippen, H. Sucar, H. Su, J. Chuang, N. Vasseghi, R. Ramchandani, R. Martin, R. Conrad, Y. Chen, K. Yeager, W. Voegtli Jr., M. Seddighnezhad, Y. Van Atta, **MIPS R10000 Superscalar Microprocessor**. HOT CHIPS Symposium VII, Stanford CA, August 13-15, 1995.

2. * M. Sirbu and J. Chuang, **Public-Key Based Ticket Granting Service in Kerberos**, IETF Internet Draft, May 1996.

3. M. Sirbu and J. Chuang, **Distributed Authentication in Kerberos Using Public Key Cryptography**. Proceedings of the Internet Society Symposium on Network and Distributed System Security (NDSS'97), February 1997.

4. J. Chuang and M. Sirbu, **Pricing Multicast Communications: A Cost-Based Approach**. Proceedings of the Internet Society INET'98 Conference, July 1998.

5. * J. Chuang, **Economies of Scale in Information Dissemination over the Internet**. Ph.D. Dissertation, Carnegie Mellon University, Pittsburgh Pennsylvania, November 1998.

6. J. Chuang and M. Sirbu, **Distributed Network Storage with Quality-of-Service Guarantees**. Proceedings of the Internet Society INET'99 Conference, June 1999.

7. J. Chuang, **Network Transmission and Storage: Vertical Relationships and Industry Structure**. 27th Telecommunications Policy Research Conference, September 1999. (Abstract reviewed paper)

8. J. Chuang and M. Sirbu, **Optimal Bundling Strategy for Digital Information Goods: Network Delivery of Articles and Subscriptions**. *Information Economics and Policy* 11(2): 147-176, 1999.

9. J. Chuang, **Resource Allocation for stor-serv: Network Storage Services with QoS Guarantees**. Proceedings of Internet2 Network Storage Symposium, October 1999.

10. J. Chuang and M. Sirbu, **Distributed Network Storage with Quality-of-Service Guarantees**. *Journal of Network and Computer Applications* 23(3): 163-185, July 2000.

11. J. Chuang and M. Sirbu, **Network Delivery of Information Goods: Optimal Pricing of Articles and Subscriptions**. In *Internet Publishing and Beyond: The Economics of Digital Information and Intellectual Property*, by B. Kahin and H. Varian (eds.), MIT Press, August 2000.

12. A. Myers, J. Chuang, U. Hengartner, Y. Xie, W. Zhuang, and H. Zhang, **A Secure, Publisher-Centric Web Caching Infrastructure**. Proceedings of IEEE INFOCOM 2001, April 2001.

13. J. Chuang and M. Sirbu, **Pricing Multicast Communications: A Cost-Based Approach**. *Telecommunication Systems* 17 (3): 281-297, July 2001.

14. J. Chuang, **Economics of Scalable Network Services**. Proceedings of SPIE ITCOM 2001, August 2001.

15. K. Norlen, G. Lucas, M. Gebbie, and J. Chuang, **EVA: Extraction, Visualization and Analysis of the Telecommunications and Media Ownership Network**. Proceedings of International Telecommunications Society 14th Biennial Conference (ITS2002), August 2002.

16. M. Feldman and J. Chuang, **Service Differentiation in Web Caching and Content Distribution**. Proceedings of IASTED International Conference on Communications and Computer Networks, November 2002.

17. J. Chuang, S. Kafka, and K. Norlen, **Efficiency and Performance of Web Cache Reporting Strategies**. Proceedings of IEEE International Workshop on Data Semantics in Web Information Systems, December 2002.

18. K. Hosanagar, R. Krishnan, J. Chuang, and V. Choudhary, **Pricing Vertically Differentiated Web Caching Services**. Proceedings of International Conference on Information Systems (ICIS 2002), December 2002.

19. A. Ghose, J. Grossklags, and J. Chuang, **Resilient Data-Centric Storage in Wireless Sensor Networks**. Proceedings of 4th International Conference on Mobile Data Management (MDM 2003), January 2003. <u>Best Paper Award</u>. Also appeared in *Lecture Notes in Computer Science* series, No. 2574, pp. 45-62, Springer Verlag, 2003.

20. M. Feldman, K. Lai, J. Chuang and I. Stoica, **Quantifying Disincentives in Peer-to-Peer Networks**. 1st Workshop on Economics of Peer-to-Peer Systems, June 2003.

21. K. Lai, M. Feldman, I. Stoica and J. Chuang, **Incentives for Cooperation in Peer-to-Peer Networks**. 1st Workshop on Economics of Peer-to-Peer Systems, June 2003.

22. G. Lucas, M. Gebbie, K. Norlen and J. Chuang, **Improving Transparency: Extracting, Visualizing, and Analyzing Corporate Relationships from SEC 10-K Documents**. 7th International Conference on Technology Policy and Innovation, June 10-13 2003.

23. G. Lucas, A. Ghose, and J. Chuang, **On Characterizing Affinity and Its Impact on Network Performance**. Proceedings of ACM SIGCOMM Workshop on Models, Methods and Tools for Reproducible Network Research, August 2003.

24. J. Chuang, **Economics of Ad-Hoc, Overlay and Traditional Networks: A Topological Perspective**, ACM SIGCOMM Workshop on Network Research: Exploration of Dimensions and Scope, August 2003. (Refereed position paper)

25. A. Ghose, J. Grossklags, and J. Chuang, **Resilient Data-Centric Storage in Wireless Sensor Networks**. *IEEE Distributed Systems Online*. November 2003.

26. K. Hosanagar, R. Krishnan, M. Smith and J. Chuang. **Optimal Pricing of Content Distribution Network Services**. Proceedings of HICSS 2004, January 2004.

27. N. Christin and J. Chuang. **On the Cost of Participating in a Peer-to-Peer Network**. Proceedings of 3rd International Workshop on Peer-to-Peer Systems (IPTPS'04), February 2004. Also appeared in *Lecture Notes in Computer Science* series, Springer Verlag, 2004.

28. J. Chuang. **Designing Incentive Mechanisms for Peer-to-Peer Systems**. Proceedings of 1st IEEE Workshop on Grid Economics and Business Models, April 2004. (Invited full paper)

29. M. Feldman, K. Lai, I. Stoica, and J. Chuang, **Robust Incentive Techniques for Peer-to-Peer Networks**. Proceedings of 5th ACM Conference on Electronic Commerce (EC'04), May 2004.

30. A. Habib and J. Chuang, **Incentive Mechanism for Peer-to-Peer Media Streaming**. Proceedings of 12th IEEE International Workshop on Quality of Service, Montreal Canada, June 2004.

31. M. Feldman and J. Chuang, **Hidden-Action in Multi-Hop Routing**. 2nd Workshop on Economics of Peer-to-Peer Systems, Cambridge MA, June 2004.

32. N. Christin, J. Grossklags and J. Chuang, **Near Rationality and Competitive Equilibria in Networked Systems**. Proceedings of ACM SIGCOMM Workshop on Practice and Theory of Incentives in Networked Systems (PINS), August 2004.

33. Y. Chu, J. Chuang, and H. Zhang, **A Case for Taxation in Peer-to-Peer Streaming Broadcast**. Proceedings of ACM SIGCOMM Workshop on Practice and Theory of Incentives in Networked Systems (PINS), August 2004.

34. M. Feldman, C. Papadimitriou, J. Chuang, and I. Stoica, **Free-Riding and Whitewashing in Peer-to-Peer Systems**. Proceedings of ACM SIGCOMM Workshop on Practice and Theory of

Incentives in Networked Systems (PINS), August 2004. Also presented at the 3rd Workshop on Economics and Information Security (WEIS04), May 2004.

35. A. Habib, D. Xu, M. Atallah, B. Bhargava and J. Chuang, **Verifying Data Integrity in Peer-to-Peer Media Streaming**. ACM/SPIE Multimedia Computing and Networking (MMCN '05), January 2005.

36. N. Christin and J. Chuang, **A Cost-Based Analysis of Overlay Routing Geometries**. Proceedings of IEEE INFOCOM, March 2005.

37. A. Habib, J. Chuang. **A Measurement-Based Analysis of Residential Multihoming**. IEEE INFOCOM, March 2005. (Refereed poster paper)

38. A. Habib, J. Chuang, **Multihoming Media Streaming**. IEEE Workshop on Multimedia Systems and Networking (WMSN '05), April 2005.

39. N. Christin, A. Weigend, and J. Chuang, **Content Availability, Pollution and Poisoning in Peer-to-Peer File Sharing Networks**. Proceedings of ACM E-Commerce Conference (EC'05), June 2005.

40. M. Feldman, J. Chuang, I. Stoica, and S. Shenker, **Hidden-Action in Multi-Hop Routing**. Proceedings of ACM E-Commerce Conference (EC'05), June 2005.

41. M. Feldman, J. Chuang, **The Evolution of Cooperation under Cheap Pseudonyms**. Proceedings of 7th International IEEE Conference on E-Commerce Technology (CEC'05), July 2005.

42. M. Feldman and J. Chuang. **Overcoming Free-Riding Behavior in Peer-to-Peer Systems**, *ACM Sigecom Exchanges*, Summer 2005.

43. A. Habib, D. Xu, M. Atallah, B. Bhargava and J. Chuang, **A Tree-based Forward Digest Protocol to Verify Data Integrity in Distributed Media Streaming**. *IEEE Transactions on Knowledge and Data Engineering*, July 2005.

44. K. Hosanagar, R. Krishnan, J. Chuang, and V. Choudhary, **Pricing and Resource Allocation in Caching Services with Multiple Levels of Quality of Service**. *Management Science*, Vol. 51, No. 12, December 2005.

45. * P. Laskowski, J. Chuang. **Antitrust Scrutiny of Price-Fixing Clauses in Patent Licenses**. Working Paper, 2005.

46. A. Habib and J. Chuang, **MMS: A Multihome-Aware Media Streaming System**. Proceedings of 13th Multimedia Computing and Networking Conference (MMCN '06), January 2006.

47. A. Habib, N. Christin, and J. Chuang, **Taking Advantage of Multihoming with Session Layer Striping**, Proceedings of the 9th IEEE Global Internet Symposium (Global Internet 2006), pages 102-107, April 2006.

48. M. Feldman, C. Papadimitriou, J. Chuang, and I. Stoica, **Free-Riding and Whitewashing in Peer-to-Peer Systems**. *IEEE Journal on Selected Areas in Communications*, Vol. 24, No. 5, May

2006.

49. A. Habib and J. Chuang, **Service Differentiated Peer Selection: An Incentive Mechanism for Peer-to-Peer Media Streaming**. *IEEE Transactions on Multimedia*, Vol. 8, No. 3, June 2006.

50. * J. Feigenbaum, J. Chuang, D. Pennock, editors, **Proceedings of the 7th ACM Conference on Electronic Commerce**, ACM, June 2006.

51. P. Laskowski and J. Chuang, **Network Monitors and Contracting Systems: Competition and Innovation**. Proceedings of ACM SIGCOMM, September 2006.

52. G. Lucas, M. Gebbie, K. Norlen and J. Chuang, **Improving Transparency: Extracting, Visualizing, and Analyzing Corporate Relationships from SEC 10-K Documents**. *International Journal on Technology, Policy and Management*, Vol. 7, No. 1, pp. 15-31, 2007.

53. M. Feldman, J. Chuang, I. Stoica, S. Shenker. **Hidden-Action in Network Routing**. *IEEE Journal on Selected Areas in Communications*, 2007.

54. M. Babaioff, J. Chuang. **On the Optimality and Interconnection of Valiant Load-Balancing Networks**. Proceedings of the 26th Annual IEEE Conference on Computer Communications (IEEE INFOCOM), May 2007.

55. A. Habib, N. Christin, J. Chuang. **On the Feasibility of Switching ISPs in Residential Multihoming**. Proceedings of International Workshop on Quality-of-Service (IWQoS), June 2007.

56. A. Habib, J. Chuang. **Improving Application QoS with Residential Multihoming**. *Computer Networks*, Volume 51, Issue 12, Pages 3323-3337, August 2007.

57. D. Joseph, N. Shetty, J. Chuang, I. Stoica. **Modeling the Adoption of New Network Architectures**. Proceedings of ACM CoNEXT, December 2007.

58. M. Babaioff, J. Chuang, M. Feldman. **Incentives in Peer-to-Peer Systems**. Chapter 23 of N. Nisan, T. Roughgarden, E. Tardos, V. Vazirani, eds., *Algorithmic Game Theory*, Cambridge University Press, 2007.

59. S. Buchegger, J. Chuang. **Encouraging Cooperative Interaction Among Network Entities**. Book chapter in F.H.P. Fitzek, M.D. Katz, eds., *Cognitive Wireless Networks: Concepts, Methodologies and Visions Inspiring the Age of Enlightenment of Wireless Communications*, Springer, 2007.

60. J. Grossklags, N. Christin, J. Chuang. **Secure or Insure? A Game-Theoretic Analysis of Information Security Games**. Proceedings of the 17th International World Wide Web Conference (WWW2008), April 2008.

61. J. Grossklags, N. Christin, J. Chuang. **Predicted and Observed User Behavior in the Weakest-Link Security Game**. Proceedings of the 2008 USENIX Workshop on Usability, Psychology, and Security (UPSEC'08), April 2008.

62. J. Grossklags, N. Christin, J. Chuang. **Security Investment (Failures) in Five Economic Environments: A Comparison of Homogeneous and Heterogeneous User Agents**. 7th

Workshop on the Economics of Information Security (WEIS'08), June 2008.

63. J. Grossklags, N. Christin, J. Chuang. **Security and Insurance Management in Networks with Heterogeneous Agents**. Proceedings of ACM E-Commerce Conference (EC 2008), July 2008.

64. P. Laskowski, B. Johnson, J. Chuang. **User-Directed Routing: From Theory, towards Practice**. Proceedings of ACM SIGCOMM Workshop on the Economics of Networks, Systems, and Computation (NetEcon 2008), August 2008.

65. N. Christin, J. Chuang, J. Grossklags, **Economics-Informed Design of Content Delivery Networks**. in: R. Buyya, A.K. Pathan, A. Vakali, eds., *Content Delivery Networks: Principles and Paradigms*, Springer Verlag, August 2008.

66. K. Hosanagar, J. Chuang, R. Krishnan, M. D. Smith, **Service Adoption and Pricing of Content Delivery Network (CDN) Services**. *Management Science*, September 2008.

67. * P. Laskowski, J. Chuang. **Empowering Users to Break the Internet Impasse**. UC Berkeley Technical Report. Feb 26, 2009. Presented at I3P Workshop on the Economics of Securing the Information Infrastructure, March 2009.

68. P. Laskowski, J. Ubois, D. Marvit, J. Chuang. **Exploring Digital Content in the Age of Peer-to-Peer**. Proceedings of Workshop on the Economics of Networks, Systems, and Computation (NetEcon 2009), July 2009.

69. * J. Chuang, L. Fortnow, P. Pu, editors, **Proceedings of the 10th ACM Conference on Electronic Commerce**, ACM, July 2009.

70. P. Laskowski, J. Chuang. **A Leap of Faith? From Large-Scale Testbed to the Global Internet**. Telecommunications Policy Research Conference, September 2009. (Abstract reviewed paper)

71. A. Cardenas, J. Chuang, J. Grossklags, S. Radosavac, C. Hoofnagle, V. Paxson. **An Economic Map of Cybercrime**. Telecommunications Policy Research Conference, September 2009. (Abstract reviewed paper)

72. J. Grossklags, S. Radosavac, A. Cardenas, J. Chuang. **Nudge: Intermediaries' Role in Interdependent Network Security**. Proceedings of 3rd International Conference on Trust and Trustworthy Computing (Trust'10), June 2010. Published in: A. Acquisti, S. Smith, and A.-R. Sadeghi (Eds.), Lecture Notes in Computer Science (LNCS), No. 6101, Springer Verlag, 2010, pp. 323-336.

73. B. Johnson, J. Grossklags, N. Christin, J. Chuang. **Are Security Experts Useful? Bayesian Nash Equilibria for Network Security Games with Limited Information**. Proceedings of 15th European Symposium on Research in Computer Security (ESORICS 2010), September 2010.

74. P. Laskowski, J. Chuang. **Innovations and Upgrades in Virtualized Network Architectures**. Proceedings of 2010 Workshop on the Economics of Networks, Systems, and Computation (NetEcon 2010), October 2010.

75. B. Johnson, J. Grossklags, N. Christin, J. Chuang. **Uncertainty in Interdependent Security Games**. Proceedings of 2010 Conference on Decision and Game Theory for Security (GameSec

2010), November 2010.

76. * J. Chuang. **Incentive Dynamics in Interdependent Network Security. Or: Buying a Raft and Out-Running a Bear**. Invited plenary lecture paper, 2nd International Conference on Game Theory for Networks (GameNets 2011), April 2011.

77. B. Johnson, J. Grossklags, N. Christin, J. Chuang. **Nash Equilibria for Weakest Target Security Games with Heterogeneous Agents**. Proceedings of 2nd International Conference on Game Theory for Networks (GameNets 2011), April 2011.

78. J. Chuang. **Loci of Competition for Future Internet Architectures**. *IEEE Communications Magazine*, Special Issue on Future Internet Architectures: Design and Deployment Perspectives, July 2011.

79. P. Chia, J. Chuang. **Colonel Blotto in the Phishing War**. Proceedings of Conference on Decision and Game Theory for Security (GameSec 2011), November 2011.

80. P. Chia, J. Chuang. **Community-based Web Security: Complementary Roles of the Serious and Casual Contributors**. Proceedings of ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2012), February 2012.

81. B. Johnson, J. Chuang, J. Grossklags, N. Christin. **Metrics for Measuring ISP Badness: The Case of Spam**. Proceedings of 16th International Conference on Financial Cryptography and Data Security (FC 2012), February 2012.

82. J. Chuang, H. Nguyen, C. Wang, B. Johnson. **I Think, Therefore I Am: Usability and Security of Authentication Using Brainwaves**. 2013 Workshop on Usable Security (USEC 2013), Proceedings of 17th International Conference on Financial Cryptography and Data Security (FC 2013), April 2013.

83. S. Benthall, J. Chuang. **Computational Asymmetry in Strategic Bayesian Networks**. Joint Workshop on Pricing and Incentives in Networks and Systems W-PIN+NetEcon, June 2013. (Refereed poster paper)

84. M. Densmore, B. Bellows, J. Chuang, E. Brewer. **The Evolving Braid: How an Organization in Uganda Achieved Reliable Communications**. Proceedings of Sixth International Conference on Information and Communication Technologies and Development (ICTD 2013), December 2013.

85. P. Laskowski, B. Johnson, T. Maillart, J. Chuang, **Government Surveillance and Incentives to Abuse Power**. Proceedings (Online) of 13th Workshop on the Economics of Information Security (WEIS 2014), June 2014.

86. M. Klein, T. Maillart, J. Chuang. **Characterizing Contribution Strategies and Quality with Bi-Partite Networks**. NetSci 2014, June 2014. (Refereed poster paper)

87. J. Chuang. **One-Step Two-Factor Authentication with Wearable Bio-Sensors**. Workshop on "Who are you?! Adventures in Authentication" (WAY 2014), Symposium on Usable Privacy and Security (SOUPS 2014), July 2014.

88. B. Johnson, T. Maillart, J. Chuang. **My Thoughts are Not Your Thoughts: Robustness of Brainwave Signal Authentication Against Impersonation Attacks**. Workshop on Usable Privacy & Security for wearable and domestic ubIquitous DEvices (UPSIDE 2014), Proceedings of ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2014), September 2014.

89. * J. Chuang, P. Loiseau, editors, **The Joint Workshop on Pricing and Incentives in Networks and Systems (W-PIN+NetEcon 2014)**, *ACM Performance Evaluation Review*, December 2014.

90. * B. Johnson, J. Chuang, editors, **The First Workshop on Wearable Security and Privacy**, *Springer Lecture Notes in Computer Science*, January 2015.

91. N. Merrill, T. Maillart, B. Johnson, J. Chuang. **Improving Physiological Signal Classification Using Logarithmic Quantization and a Progressive Calibration Technique**. Proceedings of 2nd International Conference on Physiological Computing Systems (PhyCS 2015), February 2015.

92. M. Klein, T. Maillart, J. Chuang. **The Virtuous Circle of Wikipedia: Recursive Measures of Quality and Expertise**. Proceedings of 18th ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW 2015), March 2015.

93. * J. Chuang, N. Merrill, T. Maillart, and Students of the UC Berkeley Fall 2014 INFO290 Class. **Synchronized Brainwave Recordings from a Group Presented with a Common Visual Stimulus**. March 2015. http://bit.ly/synchronized-brain-recordings

94. * J. Chuang, N. Merrill, T. Maillart, and Students of the UC Berkeley Spring 2015 MIDS Immersion Class. **Synchronized Brainwave Recordings from a Group Presented with a Common Audio-Visual Stimulus**. May 2015. http://biosense.berkeley.edu/indra_mids_5_15_dlpage/

95. B. Johnson, P. Laskowski, T. Maillart, J. Chuang, N. Christin, **Caviar and Yacht: How Your Purchase Data Can Come Back to Haunt You**. Proceedings (Online) of 14th Workshop on the Economics of Information Security (WEIS 2015), June 2015.

96. P. Paredes, R. Ko, A. Aghaseyedjavadi, L. Bäbler, J. Canny, J. Chuang. **Synestouch - Haptic + Audio Design for Wearable Devices**. Proceedings of 6th Conference on Affective Computing and Intelligent Interactions (ACII 2015), September 2015.

97. R. Bora, A. McConachie, J. Chuang, B. Shapiro. **Audio Autonomy: An Ambient, Interactive Audio Companion System for Dementia Patients and Caregivers**. 5th Workshop on Interactive Systems in Healthcare (WISH), ACM Conference on Human Factors in Computing Systems (CHI 2016), May 2016.

98. P. Chia, J. Chuang, Y. Chen. **Whack-a-mole: Asymmetric Conflict and Guerrilla Warfare in Web Security**. Proceedings (Online) of 15th Workshop on the Economics of Information Security (WEIS 2016), June 2016.

99. N. Merrill, M. Curran, J. Yang, J. Chuang. **Classifying Mental Gestures with In-Ear EEG**. Proceedings of IEEE EMBS 13th Annual International Body Sensor Networks Conference (BSN 2016), June 2016.

100. T. Maillart, N. Merrill, J. Chuang. **Brain Decoding using EEG-controlled Rapid Serial Visual Presentation**. 22nd Annual Meeting of the Organization for Human Brain Mapping (OHBM 2016), June 2016.

101. E. Sedenberg, J. Chuang, D. Mulligan. **Designing Commercial Therapeutic Robots for Privacy Preserving Systems and Ethical Research Practices Within the Home**. *International Journal of Social Robotics*, June 2016.

102. M. Curran, J. Yang, N. Merrill, J. Chuang. **Passthoughts Authentication with Low Cost EarEEG**. Proceedings of 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2016), August 2016.

103. G. Chuang, J. Chuang. **Passthoughts on the Go: Effect of Exercise on EEG Authentication**. 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2016), August 2016. (Refereed short paper)

104. E. Sedenberg, J. Chuang. **Smile for the Camera: Privacy and Policy Implications of Emotion AI**. Telecommunications Policy Research Conference, September 2017. (Abstract reviewed paper)

105. M. Curran, N. Merrill, S. Gandhi, J. Chuang. **One-Step, Three-Factor Authentication in a Single Earpiece**. Adjunct Proceedings of ACM UbiComp/ISWC, September 2017. (Refereed poster paper)

106. R. Wong, D. Mulligan, J. Chuang. **Using Science Fiction Texts to Surface User Reflections on Privacy**. Adjunct Proceedings of ACM UbiComp/ISWC, September 2017. (Refereed poster paper)

107. N. Merrill, M. Curran, J. Chuang. **Is the Future of Authenticity In Our Heads?: Moving Passthoughts From the Lab to the World**. Proceedings of the 2017 New Security Paradigms Workshop (NSPW 2017), pages 70-79, October 2017.

108. T. Maillart, M. Zhao, J. Grossklags, J. Chuang. **Given Enough Eyeballs, All Bugs are Shallow? Revisiting Eric Raymond with Bug Bounty Programs**. *Journal of Cybersecurity*, October 2017. Also in Proceedings (Online) of 15th Workshop on the Economics of Information Security (WEIS 2016), June 2016.

109. R. Wong, D. Mulligan, E. Van Wyk, J. Pierce, J. Chuang. **Eliciting Values Reflections by Engaging Privacy Futures Using Design Workbooks**. *PACM on Human-Computer Interaction*, Vol. 1, No. 2, Article 111, November 2017. (CSCW 2018 Online First) Best Paper Award

110. E. Sedenberg, R. Wong, J. Chuang. **A Window into the Soul: Biosensing in Public**. In *Surveillance, Privacy and Public Spaces*, by Newell, Timan, Koops (eds.), Routledge, March 2018.

111. N. Merrill, J. Chuang. **From Scanning Brains to Reading Minds: Talking to Engineers about Brain-Computer Interface**. Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI 2018), April 2018.

112. R. Wong, N. Merrill, J. Chuang. **When BCIs have APIs: Design Fictions of Everyday Brain-Computer Interface Adoption**. Proceedings of ACM Conference on Designing Interactive Systems (DIS 2018), June 2018. Best Paper Honorable Mention Award.

113. M. Curran, N. Merrill, S. Gandhi, J. Chuang. **Exploring the Feasibility and Performance of One-Step Three-Factor Authentication with Ear-EEG**. 5th International Conference on Physiological Computing Systems (PhyCS 2018), September 2018. Best Student Paper Award.

114. T. Piplani, N. Merrill, J. Chuang. **Faking it, Making it: Fooling and Improving Brain-Based Authentication with Generative Adversarial Networks**. Proceedings of IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS 2018), October 2018.

115. N. Howell, J. Chuang, A. De Kosnik, G. Niemeyer, K. Ryokai. **Emotional Biosensing: Exploring Critical Alternatives.** *PACM on Human-Computer Interaction*, November 2018. (CSCW 2018)

116. N. Merrill, M. Curran, S. Gandhi, J. Chuang. **One-Step, Three-Factor Passthought Authentication with Custom-Fit, In-Ear EEG.** *Frontiers in Neuroscience*, April 2019.

117. M. Curran, J. Gordon, L. Lin, P.K. Sridhar, J. Chuang. **Understanding Digitally-Mediated Empathy: An Exploration of Visual, Narrative, and Biosensory Informational Cues.** Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI 2019), May 2019.

118. N. Merrill, J. Chuang. **Models of Minds: Reading the Mind Beyond the Brain.** Adjunct Proceedings of ACM CHI Conference on Human Factors in Computing Systems (alt.chi), May 2019.

119. N. Merrill, C. Cheshire, J. Chuang. **Sensing is Believing: What People Think Biosensors Can Reveal About Thoughts and Feelings.** Proceedings of ACM Conference on Designing Interactive Systems (DIS 2019), June 2019.

120. J. Gordon, M. Curran, J. Chuang, C. Cheshire. **Covert Embodied Choice: Decision-Making and the Limits of Privacy Under Biometric Surveillance.** Proceedings of ACM CHI Conference on Human Factors in Computing Systems (CHI 2021), May 2021.

121. J. Gordon, J. Chuang. **Active Dynamical Prospection: Modeling Sensorimotor Control During Pathfinding via Particle-Based Mental Simulation.** Proceedings of ALIFE 2021 Conference on Artificial Life, July 2021.

122. J. Chuang. **Neural Dynamics of a Single Human with Long-Term, High Temporal Density Electroencephalography.** Proceedings of the 43rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC'21), October 2021.

TEACHING

INFO 206: Distributed Computing Applications and Infrastructure
  (F99, S02, S03, S04, S05, F05, F06, F07, F08, F09, F10, F13)

INFO 234/134: Information Technology Economics, Strategy, and Policy
  (offered as INFO 290 in F08, F11); (S14, S15, S16, S17, S18, S19, S21)

INFO 250: Computer-Based Communications Networks and Systems
  (S00, S01, F01, F02, F03, F04, S06, F07, S10, S11)

INFO 290: Special Topics
  Biosensory Computing (F21)
  Sensors, Humans, Data, Apps (F14, F15, F16, F18)
  Seminar on Ubiquitous Sensing (S16, S18)
  Mind-Reading and Telepathy for Beginners and Intermediates (co-instructor: Nick Merrill) (F17)
  Projects on Mind-Reading Machines (co-instructor: Nick Merrill) (F17)
  Open Collaboration and Peer Production (co-instructors: Thomas Maillart, Sebastian Benthall) (F13)
  Economics of Network Security and Privacy (co-instructor: Jens Grossklags) (S08)
  Advanced Topics in Computer Networking (S01)

INFO 295: Doctoral Colloquium
  (F01, S02, S15, F16, F17, F19, S21)

INFO 296A: Research Seminars
  Economics-Informed Network Design (F05)
  Research Methods (S01)

STUDENT MENTORING

Postdoctoral Scholars
  1. Nicolas Christin (2003-2005)
  2. Ahsan Habib (2003-2005)
  3. Sonja Buchegger (2004-2006)
  4. Pedro Ferreira (2004-2005)
  5. Moshe Babaioff (2005-2007)
  6. Benjamin Johnson (2009-2011; 2013-2014)
  7. Timo Smura (2012-2013)
  8. Thomas Maillart (2013-2017)

Ph.D. Students
  1. Michal Feldman (2001-2005)
  2. Jens Grossklags (2003-2009)
  3. Paul Laskowski (2004-2009)
  4. Melissa Densmore (2006-2012; co-advised with AnnaLee Saxenian)
  5. Ashwin Mathew (2008-2014; co-advised with Coye Cheshire)
  6. Nick Merrill (2013-2018)
  7. Elaine Sedenberg (2013-2019; co-advised with Deirdre Mulligan)
  8. Max Curran (2015-2020)
  9. Jeremy Gordon (2017-present)
  10. Ando Shah (2021-present)

Ph.D. Dissertation Committee, Chair (Completed)
1. Michal Feldman, Incentives for Cooperation in Peer-to-Peer Systems, 2005
2. Paul Laskowski, Designing Networks for Innovation, 2009
3. Jens Grossklags, Secure or Insure: An Economic Analysis of Security Interdependencies and Investment Types, 2009
4. Melissa Densmore, The Evolving Braid: An Ethnography of Technology Change in Developing Regions, 2012 (Co-Chair)
5. Ashwin Mathew, Where in the World is the Internet? Locating Political Power in Internet Infrastructure, 2014 (Co-Chair) – **Winner of the 2016 iSchools Doctoral Dissertation Award**
6. Sebastian Benthall, Context, Causality, and Information Flow: Implications for Privacy Engineering, Security, and Data Economics, 2018 (Co-Chair)
7. Nick Merrill, Mind-Reading and Telepathy for Beginners and Intermediates: What People Think Machines Can Know About the Mind, and Why Their Beliefs Matter, 2018
8. Elaine Sedenberg, Information-Intensive Innovation: The Changing Role of the Private Firm in the Research Ecosystem through the Study of Biosensed Data, 2019 (Co-Chair)
9. Max Curran, Sensor-Mediated Empathy: A Mixed Methods Investigation of Social Biosensing, 2020

Ph.D. Dissertation Committee, Inside Member (Completed)
1. Alessandro Acquisti, Essays on Privacy, Anonymity, and Tracking in Computer-Mediated Economic Transactions, 2003
2. Barbara Rosario, Extraction of Semantic Relations from Bioscience Text, 2005
3. Nathan Good, Designing for Informed Consent: A Multi-Domain, Interdisciplinary Analysis of the Technological Means to Provide Informed Consent, in order to Manage Users' Privacy and Security, 2008
4. Fredrik Wallenberg, Three Essays in Information Economics, 2009
5. Patrick Riley, The Revolution Will Be Televised: Identifying, Organizing, and Presenting Correlations Between Social Media and Broadcast Television, 2011
6. Joshua Blumenstock, Essays on the Economic Impacts of Mobile Phones in Sub-Saharan Africa, 2012
7. Muhammad Raza Khan, Machine Learning for the Developing World using Mobile Communication Metadata, 2018
8. Niall Keleher, Economic Indicators and Social Networks, 2019
9. Guanghua Chi, Migration and Social Networks: New Insights from Novel Data, 2020
10. Noura Howell, Emotional Meaning Making with Data, 2020
11. Richmond Wong, Values by Design Imaginaries: Exploring Values Work in UX Practice, 2020

Ph.D. Dissertation Committee, Outside Member (Completed) (n=63)

Ph.D. Qualifying Exam Committees (n=80; chair for 13)

Ph.D. Preliminary Exam Committees (n=9; chair for 3)

Masters Final Projects
1. Huney Kong, DoubleQuote.com -- vertical portal for Washington Correspondents, 2000 (**Best Project Award: 2nd Place**)
2. Kim Norlen, Valarie Lanard, Gabriel Lucas, Media-Map: Visualizing Ownership in the Media Industry, 2001 (**Best Project Award: 2nd Place**)
3. Bibi Ephraim, Karthik Gourisankaran, Jeffrey McNeill, TINA: Tool for Information Architects, 2001

4. Steve Kafka, Ian Liu, Azeen Chamarbagwala, e-Decisions, facilitating collaborative group decision-making, 2002 (**Best Project Award: 3rd Place**)
5. Gloria Chen, Linda Harjono, Saifon Obromsook, CourseLinx, 2002
6. Orchuma Sakdamnuson, Jian Wu, Artist Central, 2002
7. Paul Poling, Christina Nigro, mClinic, 2006
8. Neal Fultz, Blue versus Red: Towards a model of distributed security attacks, 2008
9. Johnson Nyugen, Course Threads, 2008
10. Isaac Salier-Hellendag, Mapping San Francisco's Photographic History, 2009 (**Best Project Award: Honorable mention**)
11. Angel Rodrigeuz, Brendan Curran, GameBadger: Mobile Gaming with a Social Twist, 2012 (**Best Project Award: Honorable mention**)
12. Prabhavathi Matta, Vaidyanath Venkitasubramanian, Neuroclick, 2014
13. Arezu Aghaseyedjavadi, Marjan Ghahremani, Dheera Prabhakar, Ruchita Rathi, Rahul Verma, City Trails, 2015 (**Best Project Award: Honorable mention**)
14. Renu Bora, Andrew McConachie, Audio Autonomy, 2015 (**Best Project Award: Honorable mention**)
15. Derek Kuo, Kiki Liu, Noriko Misra, LinkedLiving, 2015
16. Pi-Tan Hu, Wenqin Chen, Mole-bile Voice, 2016 (**Best Project Award: Winner**)
17. Audrey Leung, April Dawn Kester, Richard Chen, EudaeSense, 2016
18. Bryan Morgan, Juan Shishido, Joshua Appleman, Anubhav Gupta, Robin Kalia, Hydrobase, 2016
19. Aditya Mishra, Stephanie Snipes, Alexander Jones, Stacey Baradit, Sindhuja Jeyabal, Portal, 2016
20. Dina Bseiso, Keshav Potluri, Richa Prajapati, Safei Gu, Sameer Bajaj, VR the Change, 2017 (co-advised with Coye Cheshire)
21. Jong-Kai Yang, Pooja Jain, Saikiran Dulla, Weng-Ken Hsiao, TEEM, 2017 (co-advised with Coye Cheshire)
22. Divya Garg, Jeanie Oh, Lynell Amanna, Teal Alert, 2017 (**Best Project Award: Winner**)
23. Yiyi Chen, Shannon Hamilton, Sayan Sanyal, Ed Yip, Clinico, 2018
24. Usman Raza, Sandeep Pal, Arnav Goyal, Abhishek Sinha, Intelligent Symptom Tracking for Lyme Disease, 2018
25. Leon Li, Sophie So Yeon Park, Anna Cho, Shuting Jolly Liang, Xuancheng Fan, AR Wave, 2018
26. Zhixuan Dai, Muxuan Lyu, Peiyu Yang, Qian Yu, Seeat, 2019
27. Daphne Jong, Devin Huang, Monik Pamecha, Jeffery Yu, Skindex, 2019 (**Best Project Award: Winner**)
28. Barkha Agrawal, Prakhar Chandna, Andrew Chung, Manasi Khanuja, Mandy Leung, Simulating Wildfire Evacuations for Vulnerable Communities, 2021
29. Max Ingraham-Rakatansky, Akhilesh Pandita, Qutub Khan Asghar Vajihi, Vineet Vashist, Carissa Yao, Porter, 2021

Masters Thesis Committee
1. Abhishek Ghose, Resilient Data-Centric Storage for Wireless Ad-Hoc Sensor Networks, EECS, 2003 (Chair)
2. Ashima Atul, Compact Implementation of Distributed Inference Algorithms for Network Monitoring, EECS, 2008
3. Byung Gon Song, Driving Dataset in the Wild: Various Driving Scenes, EECS, 2016
4. Ryan Goy, 3D Object Detection with Sparse Sampling Neural Networks, EECS, 2018

Senior Honors Thesis, Reader
1. Tiffany Hwu, Exploring the Uses of Psychological Models of Generalization in Music Recommendation Systems, 2014

Research Experience for Undergraduates
1. Hamilton Nguyen, Usability and Security of Authentication Using Brainwaves, 2011-2012
2. Charles Wang, Usability and Security of Authentication Using Brainwaves, 2011-2012
3. Ryuka Ko, Haptic and Audio Design for Wearable Devices, 2015
4. Eric Huynh, At-Scale Emotion Recognition from Streaming Facial Images, 2016

Visiting Students
1. Pern-Hui Chia, Norwegian University of Science and Technology, 2011
2. Stefan Hong, National Taiwan University, 2012
3. Milou Feijt, Eindhoven University of Technology, 2016
4. Ying-Lei Toh, Toulouse School of Economics, 2017
5. Priyashri Sridhar, Singapore University of Technology and Design, 2018

UNIVERSITY SERVICE

School Level:
  Head Graduate Advisor, MIMS Program, 2016-2019
  Head Graduate Advisor, PhD Program, 2008-2012
  Chair, MIMS Program & Curriculum Committee, 2016-2019
  Chair, PhD Admissions Committee, 2008-2012
  Chair, Faculty Search Committee, 2007-2008, 2013-2014
  Member, Faculty Search Committee, 2005-2006, 2015-2016
  Member, MIMS Admissions Committee, 2000-2001, 2004-2005, 2014-2015
  Member, PhD Admissions Committee, 2000-2002, 2013-2014
  Member, PhD Program & Curriculum Committee, 2002, 2013-2014, 2021 (Spring)
  Member, Online Education Task Force, 2011-2012
  Member, MIMS Technology Curriculum Committee, 2005-2012
  Member, Departmental Space and Planning Committee, 2005-2006
  Member, Departmental Computing Committee, 2004-2005

Campus Level:
  Information Risk Governance Council, 2017-present
  Member, Data Science Faculty Advisory Council, December 2018-June 2019
  Member, Schmidt Science Fellows Review Committee, 2017
  Member, Regents' and Chancellor's Scholarship Subcommittee, 2010-2011, 2013-2017
  Member, Admissions, Enrollment, and Preparatory Education Subcommittee, 2015-2016
  Member, School of Information Management & Systems Dean Search Committee, 2002-2003
  Member, Faculty Advisory Committee, VOCAL Campus Communications Strategic Planning Project, 2001-2002
  Chair and Member, various departmental and campus personnel ad hoc committees
  Member, other campus ad hoc review committee, 2017

PROFESSIONAL ACTIVITIES

Steering Committee:
  Workshop on the Economics of Networks, Systems, and Computation (NetEcon), 2006–present

General Chair:
  10th ACM Conference on E-Commerce (EC), 2009
  1st Workshop on Economics of Peer-to-Peer Systems (P2PEcon), 2003

Program Committee Co-Chairs:
  1st Workshop on Wearable Security and Privacy (WS&P), 2015
  Joint Workshop on Pricing and Incentives in Networks and Systems (W-PIN+NetEcon), 2014
  7th ACM Conference on E-Commerce (EC), 2006
  1st Workshop on Economics of Peer-to-Peer Systems (P2PEcon), 2003

Program Committees:
  International Conference on Physiological Computing Systems (PhyCS): 2015, 2016, 2017, 2018
  Workshop on Economics and Information Security (WEIS): 2016
  IEEE Workshop on User Authentication for Emerging Interfaces: 2015
  Conference on Decision and Game Theory for Security (GameSec): 2010, 2012, 2013, 2014
  Telecommunications Policy Research Conference (TPRC): 2010, 2011
  International ICST Conference on Game Theory for Networks (GameNets): 2011
  ACM E-Commerce Conference (EC): 2005, 2008, 2010 Senior PC Member
  International Conference on World Wide Web (WWW): 2008, 2010
  International Conference on Electronic Commerce (ICEC): 2009
  International Workshop on Peer-to-Peer Systems (IPTPS): 2008
  Workshop on Economic Models for Distributed Systems (EMDS): 2008
  IEEE/ACM International Conference on Information and Communication Technologies and
    Development (ICTD): 2006, 2007
  Workshop on Grid Economics & Business Models (GECON): 2006, 2007
  Workshop on Economic Models and Algorithms for Grid Systems (EMAGS): 2007
  ACM SIGCOMM: 2006
  IEEE Conference on E-Commerce Technology (CEC): 2005
  IEEE International Conference on Distributed Computing Systems (ICDCS): 2005
  Workshop on Economics of Peer-to-Peer Systems (P2PEcon): 2004, 2005
  AIS International Conference on Information Systems (ICIS): 2004 (Associate Editor for ITS track)
  ACM SIGCOMM Workshop on Practice & Theory on Incentives in Networked Systems (PINS)
    2004
  Workshop on Information Technology and Systems (WITS) 2003
  IEEE International Workshop on Quality of Service (IWQoS): 2002, 2003

Editorial Board: *International Journal on Information Technology and Decision Making*

Reviewer for: *IEEE/ACM Transactions on Networking*, *IEEE Transactions on Computing*, *IEEE Transactions on Multimedia*, *IEEE Journal on Selected Areas in Communications, IEEE Journal on Information Forensics and Security, IEEE Communications Magazine, ACM Transactions on Computer Systems*, *ACM Transactions on the Web*, *Journal of Algorithms*, *Management Science*, *Journal of Economics & Management Strategy*, *Electronic Commerce Research*, *INFORMS Journal on Computing*, *Review of Network Economics*, *Internet Encyclopedia*, *The Internet Society Journal*, *Algorithmic Game Theory* (Cambridge University Press), IEEE INFOCOM, ACM SIGCOMM, ACM HotNets, ACM Mobisys, ACM CHI, WWW.

Service at the National Science Foundation (NSF):
  CISE CNS Review Panel, 2013
  CISE CNS Committee of Visitors (CoV), 2009
  CISE CNS Review Panel, 2006
  CISE Advisory Committee, Subcommittee on Middleware Infrastructure, 2000
  Ad hoc reviews, various

Jury, Tech-to-Market Innovation Challenge, Orange Silicon Valley and Qualcomm Inc., May 2014.

Vice-Chair, IEEE Society on Social Implications of Technology, Santa Clara Valley Chapter, 1994-1995.

Computing Community Consortium (CCC) Leadership in Science Policy Institute, 2011.

EXTRAMURAL SUPPORT

Principal Investigator, "Covert Embodied Choice: Using Physiology Tracking in VR to Explore the Limits of Privacy during Decision-Making", Center for Long-Term Cybersecurity, Hewlett Foundation, $100,000, 2019

Research Gift, Facebook, $40,000, 2018

Co-Principal Investigator, "Study of Private Sector Research and Data Sharing Practices", Alfred P. Sloan Foundation, $18,500, 2017-2019

Principal Investigator, "Toward One-Step Three-Factor Authentication Using Custom-Fit Ear EEG", Center for Long-Term Cybersecurity, Hewlett Foundation, $150,000, 2017-2018

Principal Investigator, "Security and Privacy of Biosensing at Scale", Center for Long-Term Cybersecurity, Hewlett Foundation, $100,000, 2016

In-Kind Sponsorship for "Sensors, Humans, Data, Apps" Course from: Affectiva, Intel Research, and SensoMotoric Instruments, Fall 2015

Faculty Research Award, "Wearable Authentication with In-Ear Electro-Encephalography (EEG)", Google, $76,500, 2015

In-Kind Sponsorship for "Sensors, Humans, Data, Apps" Course from: Advanced Brain Monitoring, Google, Neurosky, Oculus, Samsung, and SensoMotoric Instruments, Fall 2014

Faculty Investigator, Team for Research in Ubiquitous Secure Technology (TRUST), National Science Foundation, $260,000, 2009-2016

Principal Investigator, Incentive Engineering for Network Security, UC MICRO Program and DoCoMo Labs USA, $93,000, 2008-2009

Research Gift, Fujitsu Labs of America, $50,000, 2008

Principal Investigator, The 100x100 Project (http://netecon.berkeley.edu/100x100/), National Science Foundation ITR Program (ANI-0331659), $1.0 Million (part of $7.5 Million Collaborative

Research), 2003-2008 http://www.nsf.gov/awardsearch/showAward?AWD_ID=0331659

Principal Investigator, The Denali Project (http://denali.berkeley.edu/), National Science Foundation ITR Program (ANI-0085879), $1.5 Million (part of $5.0 Million Collaborative Research), 2000-2005 http://www.nsf.gov/awardsearch/showAward?AWD_ID=0085879

SELECTED INVITED PRESENTATIONS

Keynote Speaker: **I Think, Therefore I Am: Authentication Using Passthoughts**. IEEE ISBA Conference, Singapore, January 2018.

Invited Talk: **Application Frontiers and Challenges of Ubiquitous Biosensing**. DataEDGE Conference, Berkeley CA, May 2017.

Invited Talk: **Ubiquitous Biosensing 2036**. National Intelligence Council Conference on Technology and Governance: The Next 20 Years, Berkeley CA, January 2016.

Invited Talk: **Security and Privacy of Neurosensing At Scale**. Workshop on Security and Human Behavior, Washington DC, June 2015.

Invited Talk: **Long-Term Cybersecurity: A Neurosensing Perspective**. Swissnex San Francisco, "Vulnerability in the Connected World", San Francisco CA, May 2015.

Invited Talk: **Biosensing 2020**. Samsung Strategy and Innovation Center, Menlo Park CA, May 2015.

Invited Talk: **Neurosensing at Scale**. AAAI Spring Symposium, "Ambient Intelligence for Health and Cognitive Enhancement", Stanford CA, March 2015.

Invited Talk: **One-Step Two-Factor Authentication with Wearable Bio-Sensors**. Starkey Hearing Research Center, Berkeley CA, December 2014.

Keynote Speaker: **From Passwords to Passthoughts: Usability and Security of Authentication Using Brainwaves**. 7th Symposium on Curriculum Development in Security and Information Assurance (CDSIA 2014), San Jose CA, April 2014.

Invited Speaker: **I Think, Therefore I Am: Usability and Security of Authentication Using Brainwaves**. DARPA Information Science and Technology (ISAT) Workshop on Trusting Networks of Humans and Computers, March 2014.

Featured Speaker: **The Neuro Mobile Wearable Future**. Mobile Marketing Association (MMA) CEO Summit, July 2013.

Keynote Speaker: **Incentive Dynamics in Interdependent Network Security. Or: Buying a Raft and Out-Running a Bear**. 2nd International Conference on Game Theory for Networks (GameNets 2011), April 2011.

Invited Expert, DARPA Information Science and Technology (ISAT) Study on Macroeconomics, Game Theory and Security, January 2011.

Briefer, JASON Summer Study on Science of Cybersecurity, July 2010.

Invited Participant, Future Internet Architecture Summit, October 2009.

Keynote Speaker, 5th IEEE International Conference on Peer-to-Peer Computing, September 2005.

Invited Speaker, Academia Sinica Summer Institute on Peer-to-Peer Computing, August 2004.

SELECTED PRESS/MEDIA

Muse Magazine, Think your Password, Kathryn Hulick, March 2018.

The Atlantic, When Fingerprints Are as Easy to Steal as Passwords, Kaveh Waddell, 3/24/2017.

KRON4 TV, New Brainwave Reading Tech from Cal Berkeley Released, 11/18/2016.

IEEE Spectrum, In-Ear EEG Makes Unobtrusive Brain-Hacking Gadgets a Real Possibility, Eliza Strickland, 7/7/2016.

CNET Magazine, Use your eyes, voice -- and thoughts -- to replace passwords, Laura Hautala, 7/4/2016.

California Magazine, So Long, Passwords: What Will it Take for Us to Entrust Our Security to Biometrics? Krissy Eliot, 2/18/2016.

ZDNet Japan, 「パス思考」認証の可能性--脳波がパスワードに代わる日は来るか？, 4/20/2015.

KCRA TV, Experts: Computer passwords headed for extinction, 2/12/2015.

San Francisco Chronicle, Beyond passwords: taking cybersecurity to the next level, David R. Baker, 9/13/2014.

Wall Street Journal, Stay Secure without Passwords, Andrew Blackman, 9/15/2013.

New York Times, Machines Made to Know You, by Touch, Voice, Even by Heart, Somini Sengupta, 9/10/2013.

Smithsonian Magazine, Some Day Your Passwords Could Be Replaced by a Pill, Randy Rieland, 7/11/2013.

BBC TV (UK), Could passthoughts replace the password? Sumi Das, 7/4/2013.

Los Angeles Times, Web services speed ahead with ways to bolster customer security, Paresh Dave, 6/17/2013.

Heute (Germany), Wenn nur das Hirn das Passwort kennt, Staff, 5/8/2013.

Metro (UK), Forgotten your password? Don't worry, soon you'll be using passthoughts, David Jenkins, 4/29/2013.

Huffington Post, Brainwave Passwords Not Too Far Off, Staff, 4/26/2013.

CalTV, CalConnect: Brainwaves and Passthoughts, Denesha Williams, 4/24/2013.

CeBit (Germany), Pass-thoughts: Passwörter per Gedankenübertragung eingeben, Staff, 4/24/2013.

AOL, Brainwave Passwords Not Too Far Off, Staff, 4/17/2013.

Lemonde Informatique (France), L'activité cérébrale, le futur des mots de passe? Staff, 4/16/2013.

Slashdot, Passthoughts, Not Passwords: Authentication Via Brainwaves, 4/15/2013.

Popular Science, Your Brain Pattern Could Be Your Password, Rebecca Boyle, 4/15/2013.

CNN International, قريبا...الأفكار بدلا من كلمات المرور للأجهزة والحسابات, Staff, 4/15/2013.

KCBS Radio (San Francisco CA), A Password from Your Thoughts, Jeff Bell, 4/14/2013.

Dark Reading, Researchers Analyze Brainwaves To Authenticate Users, Brian Prince, 4/12/2013.

WOGX Fox TV (Gainsville FL), No passwords: logging in with your mind, Joel Waldman, 4/12/2013.

Xinhua (China), 美科學家研究通過生物識別傳感器替代傳統密碼, Staff, 4/12/2013.

Wired UK, Podcast 119: Bitcoin crash, asteroid capture, passthoughts, Nate Lanxon, 4/12/2013.

ABC News, Passthoughts? Brainwave-Based Passwords a Reality, Joanna Stern, 4/11/2013.

WJLA ABC TV (Washington DC), Brain Powered Passwords, Staff, 4/11/2013.

PC Welt (Germany), Passwort der Zukunft wird per Gedankenübertragung eingegeben, Denise Bergert, 4/11/2013.

Taiwan TV, 念力密碼誕生！99美元腦波設備 生物識別安全系統再升級, Staff, 4/11/2013.

Times of India, Forget typing password, your thought is the key, Staff, 4/11/2013.

Daily Cal, Thoughts could be future of security, Jennie Yoon, 4/10/2013.

MSN, 'Pass-thoughts' may be security of the future, Michelle McGuinness, 4/10/2013.

NBC News, Passwords? What about passthoughts? New login relies on brain signals, Nidhi Subbaraman, 4/10/2013.

PC Magazine, Researchers Look to Replace Passwords With 'Passthoughts', Chloe Albanesius, 4/10/2013.

Fox News, Your next password: a passTHOUGHT, Nic Halverson, 4/10/2013.

FOX 5 TV (New York City), No passwords: logging in with your mind, Joel Waldman, 4/10/2013.

Sydney Morning Herald (Australia), Researchers replace passwords with mind-reading 'passthoughts', Camille Bautista, 4/10/2013.

Time Magazine, Passwords May Soon Be Replaced by 'Pass-Thoughts', Fox Van Allen, 4/9/2013.

CNBC, Replace Your Password With Brainwaves? Yes, Really, Cadie Thompson, 4/9/2013.

Mashable, Researchers Replace Passwords With Mind-Reading Passthoughts, Camille Bautista, 4/9/2013.

Discovery News, Your Thought Is the Password, Nic Halverson, 4/9/2013.

Engadget Germany, Authentifizierung mit dem Kopf: Denk dir dein Passwort, Benjamin Weiss, 4/9/2013.

Wired UK, Study: we could ditch passwords in favour of 'passthoughts', Olivia Solon, 4/9/2013.

Dictionary.com, What if a password didn't contain words? Staff, 4/9/2013.

Computerra (Russia), В будущем пароли не нужно будет вводить, о них достаточно будет подумать, Staff, 4/9/2013.

Venture Beat, Brain drain: Your thoughts could soon replace passwords, Meghan Kelly, 4/8/2013.

TechCrunch, No More Typed Passwords, Berkeley Researchers Develop "Passthoughts", Gregory Ferenstein, 4/8/2013.

CNET, Why bother with passwords when you can have passthoughts? Chris Matyszczyk, 4/8/2013.