

Fuming Shih

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RESEARCH INTERESTS Contextual privacy, digital transparency, accountability, human preference modeling, policy representation, Semantic Web architecture and applications.

EDUCATION **Massachusetts Institute of Technology**, Cambridge, Massachusetts, USA
Ph.D. in Electrical Engineering and Computer Science **September 2008 – present**

- Expected graduation date: September 2014
- Advisor: Professor Hal Abelson
- Proposed Thesis: Architectural Support for Collecting and Using Personal Data Regarding Contextual Preferences

National Chiao Tung University, Hsinchu, Taiwan

Master of Science, Computer and Information Science **June 2002**

- Thesis: Discovering Ontological Information from the On-line Publications
- Advisor: Professor Chuen-Tsai Sun

B.Sc. with Honors in Computer Science **June 2000**

HONOURS AND AWARDS Best Paper Award, International Conference on Human-Computer Interaction, Las Vegas, 2013
Best Intern, Roberto Padovani Scholarship (7/208), Qualcomm Inc., San Diego, 2010
Academic Achievement Award, National Chiao Tung University, Taiwan, 2000

PROFESSIONAL EXPERIENCE **Qualcomm Inc.**
San Diego, California
Research Intern, Corporate R&D team **June 2010 – Aug 2010**
Developed a semantic model for representing contextual information from sensors and applications, and a reasoning and learning framework that enabled rules-based reasoning. Identified the roadmap for team's future R&D for context-aware activity recognition.

Qualcomm Inc.
San Diego, California
Research Intern, AWARE research team **June 2011 – Aug 2011**
Developed a semantic model for situation awareness using personal data on smartphone such as calendar data and location data. Integrating semantic reasoning and machine learning techniques for a novel situation detection algorithm.

Media Lab, MIT
Cambridge, Massachusetts
Graduate Research Assistant, Human Dynamics Group **June 2012 – August 2012**
Developed new sensor components for App Inventor, a platform for novices to create Android applications with a graphical interface. Modified the architecture of App Inventor to allow Android background services that enables new use cases for apps built with App Inventor.

Computer Science and Artificial Intelligence Laboratory (CSAIL), MIT
Cambridge, Massachusetts
Graduate Research Assistant, Decentralized Information Group **September 2008 – present**
Developed graphical editing interface for policy-aware web service mashups. Designed a semantic model for online social networks and implemented a program that retrieves a person's social network contents on Facebook and saves the data as RDF triples for semantic queries.

Designed the research for monitoring smartphone apps' behaviors of accessing personal data. Identified "context-deviated" access of personal information that increases the perceived intrusiveness of the app. The project was reported by CSAIL, Boston Globe, and Fox News. Designed and performed experiments with user studies for understanding people's preferences for disclosing contextual information to smartphone apps.

Information and Communications Research Lab, ITRI

Hsinchu, Taiwan

Associate Researcher, Advanced Technology Center

September 2004 – 2008

Led a team to develop street image capturing technology using commodity hardware and mobile web service that supports offline operations. Developed an automatic quiz generator for English learning using NLP technology. Developed a program to detect pronunciation errors by Chinese speakers using phonological rules. Designed and developed a platform for mobile media logistic services in Dual mode wireless (WLAN/GSM) environment.

PUBLICATIONS

Shih, Fuming and Boortz, Julia, "Understanding People's Preferences for Disclosing Contextual Information to Smartphone Apps", *International Conference on Human Aspects of Information Security*, 2013. **Best Paper Award.**

Fuming Shih, Oshani Seneviratne, Daniela Miao, Ilaria Liccardi, Lalana Kagal, Evan Patton, Patrick Meier and Carlos Castillo, "Democratizing Mobile App Development for Disaster Management", *IJCAI 2013 Workshop on Semantic Cities*, 2013.

Shih, Fuming, Zhang, Frances, and Weitzner, Daniel, "No Surprises: Measuring Intrusiveness of Smartphone Applications By Detecting Objective Context Deviations", *Twelfth Workshop on Privacy in the Electronic Society*, 2013.

Kuo, Yen-Ling, **Shih, Fuming**, and Hsu, Jane, "Contextual commonsense knowledge acquisition from social content by crowd-sourcing explanations", In *AAAI Workshop on Human Computation (HCOMP)*, 2012.

Paradesi, Sharon and **Shih, Fuming**, "GlobalInferencer: Linking Personal Social Content with Data on the Web", *ICWSM-11 Workshop on The Future of Social Web*, 2011.

Pato, Joe, Paradesi, Sharon, Jacobi, Ian, **Shih, Fuming**, and Wang, Sam, "Aintno: Demonstration of Information Accountability on the Web", In *Third IEEE International Conference on Information Privacy, Security, Risk and Trust (PASSAT)*, 2011.

Shih, Fuming, Narayanan, Vidya, and Kuhn, Lukas, "Enabling Semantic Understanding of Situations from Contextual Data In A Privacy-Sensitive Manner", In *AAAI Workshop on Activity Context Representation*, 2011.

Shih, Fuming and Zhang, Mi, "Towards Supporting Contextual Privacy in Body Sensor Networks for Health Monitoring Service", In *W3C Workshop on Privacy and data usage control*, 2010.

Shih, Fuming and Paradesi, Sharon, "Saveface: Save George's faces in Social Networks where Contexts Collapse", In *IAB/W3C Internet Privacy Workshop*, 2010.

Shih, Fuming and Kagal, Lalana, "Policy-Aware Pipes: Support Accountability in Mashup Service of Linked Data", In *International SMR2 Workshop on Service Matchmaking and Resource Retrieval in the Semantic Web*, 2009.

TALKS

- Information and Communication Lab, Industrial Technology and Research Institute. *Challenges of Personal Privacy for in the Big Data Era*, Jan 2013
- Graduate school of Shenzhen Hsinghua University, *Privacy for Personal Sensing on Smartphones*, Jan 2013
- Federal Trade Commission office, *AppWindow: Monitoring Apps Behaviors for Contextual Privacy*, Feb 2013

COURSEWORK

Database Systems (6.830), Machine Learning (6.867), Natural Language Processing (6.863), Distributed Algorithms (6.852), User Interface Design (6.831), TA for Introduction to Computer Science (6.001), Managerial Psychology (15.310), Graduate Studies in Policy and Technology (ESD.S40)