

Eiji Hayashi

RESEARCH INTERESTS

Human Computer Interaction
User Interface Design
Information Security
Ubiquitous Computing
Tangible Interface

EDUCATION

PhD in Human Computer Interaction Institute at Carnegie Mellon University
2008 – On going

M.S. in CyLab at Carnegie Mellon University, 2006

Master's Project Title: "For Your Eyes Only" Graphical Authentication System Using Image Filter

Advisor: Dr. Nicolas Christin, Faculty

Reader: Dr. Rachna Dhamijia, Postdoctoral Fellow in Harvard University

QPA: 3.94 / 4.0

M.E. in Kyoto University, 1998

Thesis Title: Automatic Generation of Contact State Network for Assembly Operation Using Environments

Advisor: Dr. Tsuneo Yoshikawa, Professor.

B.E. in Kyoto University, 1996

Thesis Title: Object Manipulation by a Multi-Fingered Hand using Visual Feedback

Advisor: Dr. Tsuneo Yoshikawa, Professor.

TEACHING EXPERIENCE

Teaching Assistant in Carnegie Mellon University 2008 – On going

Class Title: Applied Gadgets, Sensors and Activity Recognition in HCI (Spring, 2010)

Instructor: Scott Hudson

Contents: Prototyping, Hardware building, Machine Learning

Teaching Assistant in Carnegie Mellon CyLab Japan, 2006-2008

Class Title: Introduction to Information Security (Fall 2007)

Instructor: Nicolas Christin

Contents: Cryptography, Network Security Basics, Introduction to Security Policy

Class Title: Security in Networked Systems (Spring 2007 and Spring 2008)

Instructor: Nicolas Christin

Contents: Applied Cryptography, Information Network System, Network Security

Class Title: Information Security Risk Analysis (Spring 2007 and Spring 2008)

Instructor: Ashish Arora

Contents: Risk Analysis, Risk Management, Economics, Decision Making

Class Title: Information Security Risk Policy and Management (Spring 2006 and Spring 2007)

Instructor: Rahul Telang

Contents: Policy, Risk Management, Decision Making, Game Theory

ADDITIONAL RESEARCH EXPERIENCE

Research Assistant in Carnegie Mellon CyLab Japan, 2006-2008

Instructor: Nicolas Christin

Research Topic: Usable Security and User Authentication

INDUSTRIAL EXPERIENCE

Researcher in Advanced Technology Research and Development Center in Mitsubishi Electric Cooperation 1998-2005

- Motion Analysis and Control System Design for Factory Automation
- Software Architecture, Communication Interface and Algorithm Design for Parameter Auto Tuning
- Development of Motion Control Device and Motion Design Environment Usable for Ordinary People
- Project Leader of a research group which consisted of 3 to 5 researchers, 2003-2005

Senior Researcher in Advanced Technology Research and Development Center in Mitsubishi Electric Cooperation 2007-2008

- Investigation of Cancelable Biometrics
- Improving Accuracy of Finger Print Authentication
- Development of Communication Protocol for Security Devices
- Project Leader of a research group which consisted of 3 researchers, 2007-2008
- Steering Member of a development project which consisted of about 10 researchers and 30 engineers, 2007-2008

COMPUTER SKILLS

Computer Languages: C/C++, Visual Basic, Java, Javascript, XUL, PHP, Objective-C

Scientific Applications: MATLAB/Simulink.

PUBLICATIONS

Eiji Hayashi, Jason I. Hong, and Nicolas Christin. Security through a Different Kind of Obscurity: Evaluating Distortion in Graphical Authentication Schemes. To appear in Proceedings of the 2011 ACM Conference on Human Factors in Computing Systems (CHI 2011). Vancouver, BC, Canada. May 2011.

Eiji Hayashi and Jason I. Hong. A Diary Study of Password Usage in Daily Life. To appear in Proceedings of the 2011 ACM Conference on Human Factors in Computing Systems (CHI 2011). Vancouver, BC, Canada. May 2011.

Madoka Hasegawa, Nicolas Christin and Eiji Hayashi. New Directions in Multisensory Authentication. Late Breaking Results, Pervasive 2009.

Eiji Hayashi, Nicolas Christin, Rachna Dhamija, and Adrian Perrig. Use Your Illusion: Secure Authentication Usable Anywhere. In Proceedings of the Fourth Symposium on Usable Privacy and Security (SOUPS'08). Pittsburgh, PA. July 2008

H. Sasamoto, N. Christin, and E. Hayashi. Under Cover: Designing authentication schemes usable in front of prying eyes, ACM Conference on Human Factors in Computing Systems, 2008.

A. Funakoshi, T. Sugie and E. Hayashi. Modeling and Control of Tooling Machine Based on Redundant Drive System. Proceeding of Institute of Systems, Controls and Information Engineers Conference, 1999

E. Hayashi. Object Manipulation by a Multi-Fingered Hand using Visual Feedback. Master's Thesis in Kyoto University.

E. Hayashi and T. Yoshikawa. Automatic Generation of Contact State Network for Assembly Operation Using Environments. Proceeding of Robotics Society Japan Conference, 1996

U.S. PATENTS

7,194,329 Numerical control apparatus and numerical control system

6,912,428 System for developing an application system and implementing thereof

6,861,814 Control parameter automatic adjustment apparatus

6,639,376 Frequency characteristic identifying method and drive controlling apparatus