

# Chih-Pin Hsiao

PhD Candidate / HCI Innovator

ACME Lab, GVU Center

Georgia Institute of Technology

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## Professional Experience

**HCI Research Associate / HP Labs**

**May 2014 ~ Aug. 2014**

- Conceptualized, designed, and implemented innovative gestural, multi-display, and 3D display devices
- Adopted agile and rapid prototyping methods in multi-discipline environment with a panel of senior research scientists that led to **four patent applications** as the first author in three months of intern period

**HCI Research Intern / GE Global Research Software Center**

**May 2013 ~ Dec. 2013**

- Designed and implemented visualization algorithms and libraries (mainly in d3.js with Node.js) critical for systems used to demonstrate innovative GE technology to customers and the media
- Led the front end development of a multi-screen multi-touch input visualization technology resulting in a **patent application**.

**Graduate Research Assistant / Georgia Tech**

**Sep 2010 ~ Current**

- Designed 7 studies with more than 100 participants on wearable technologies and natural user interfaces resulting in 13 publications with more than 10 research collaborators
- Managed and supervised 14 students on multiple projects, including advising Master of Science in Human Computer Interaction thesis project, exploring novel input methods and interaction designs leading to publications in wearable computing, gestural interactions, multi-touch inputs, and multi-screen inputs

**Senior Software Engineer / Digital Alchemy**

**Sep 2008 ~ May 2013**

- Guided a team of 10 software engineers (mainly in C# .Net environment) in collaboration with the Lawrence Berkeley National Laboratory developing commercial 3D modeling and simulation software called [Simergy](#)
- Researched user experience workflows, designed user personas, and developed low- and high-fidelity wireframes and information architecture for various software projects, e.g. [Simergy](#)
- US General Services Administration (GSA) Project: [IFC Model View Definition \(MVD\)](#)
- Authoring Concept Design BIM 2010
- Authoring Design to Code Compliance Checking (ICC 2006)
- Authoring Design to Quantity Takeoff
- IFC Unit Testing Development
- IFC Model Exchange for Microsoft VISIO
- IFC Quantity Take Off for Microsoft Office Excel

**Architecture Designer / SCS Architects**

**Jan 2007 ~ May 2007**

- The New Building of China Medical University Hospital
- Landscape Planning for Pinewoods "Jim-Fo" Monastery in New York State

## Education

2010 ~ (2015) Ph.D in Design Computing / HCI Georgia Institute of Technology (GPA 4.0/4.0)

Thesis Topic: Toward Enactive Interactions to Support Creative Thinking, Advised by Ellen Do

2007 ~ 2009 Master of Science in Design Computing / HCI, University of Washington (GPA 3.9/4.0)

2000 ~ 2004 B.S. in Architecture, Department of Architecture, National Cheng Kung University

## Technical & HCI Skills

### Computer Programming Languages

C#, JAVA, JavaScript, HTML5, CSS, PHP, C++, Visual Basic, Objective-C, C, ActionScript,

### Selected Frameworks. Libraries. and Tools

Leap Motion, d3.js, Unity3D, Android, iOS, Node.js, Weka Machine Learning, OpenCV, Kinect SDK, OpenNI, OpenGL, Adobe Creative Suite, 3Ds Max, Rhinoceros 3D, V-Ray, AutoCAD, Revit

### HCI Research Methods

Experimental Design, User Studies, Semi-Structured Interviews, Qualitative Data Analysis (Grounded Theory, Thematic Analysis), Quantitative Data Analysis (Statistical Analysis, Machine Learning, Visual Analytics)

## Peer Review Publications

**Hsiao, C.-P.**, SolidSketch – Toward Enactive Interactions for Semantic Model Creation. *In the Proc. ACM Creativity and Cognition 2015* (Glasgow, Scotland), 329-330

Davis, N., Comerford, M., Jacob, M., **Hsiao, C.-P.**, Magerko, B., An Enactive Characterization of Pretend Play. *In the Proc. ACM Creativity and Cognition 2015* (Glasgow, Scotland), ACM. pp. 275-284

Davis, N., **Hsiao, C.-P.**, Singh, K.Y., Li, L., Moningi, S., Magerko, B., Drawing Apprentice – An Enactive Co-Creative Agent for Artistic Collaboration. *In the Proc. ACM Creativity and Cognition 2015* (Glasgow, Scotland), ACM. pp. 185-186

**Hsiao, C.-P.**, Li, R., Yan, X., and Do, E. Y.-L., Tactile Teacher – Sensing of Fingering in Piano Playing. *In the Proc. Tangible Embedded and Embodied Interactions 2015* (Stanford, California), ACM. pp. 257-260

Davis, N., Popova, Y., Sysoev, I., **Hsiao, C.-P.**, Zhang, D., & Magerko, B. Building Artistic Computer Colleagues with an Enactive Model of Creativity, *In the Proc. ICCV 2014*. (Ljubljana, Slovenia), pp. 38-45

Wu, Andy C.-S **Hsiao, C.-P** Waqas, J. Cheng, N. Lin, J., Interactive Visual Data Exploration Solutions for Industrial Systems, In the Proc. of IEEE Vis 2013 (Atlanta).

**Hsiao, C.-P.** Davis, N. Chen, S. Sun, B. Chen, R. and Do, Ellen Y.-L., Sketch Master – A Sketch Game for Collecting Exploratory Data, In the *Proc. of Creativity and Cognition 13'* (Sydney), ACM. pp. 320-323

Zhao, C. **Hsiao, C.-P.** and Do, Ellen Y.-L., Tangible Games for Stroke Rehabilitation with Digital Box and Blocks Test, In the *Proc. of CHI EA 13'* (Paris, France), ACM. pp. 523-528.

**Hsiao, C.-P.** Zhao, C. Do, and Ellen Y.-L., The Digital Block and Box Test – Automating Traditional Post-Stroke Rehabilitation Assessment, In the *Proc. of PerCom 13'* (San Diego, CA), IEEE. pp. 360-363.

**Hsiao, C.-P.** Davis, N. and Do, Ellen Y.-L., Dancing on the Desktop - Gesture Modeling System to Augment Design Cognition, In the Proc. of ACADIA 12' (San Francisco, CA), CuminCAD. pp. 419-428.

**Hsiao, C.-P.** Gesture modeling: improving spatial recognition in architectural design process, In *the Proc. of Creativity and cognition 11'* (Atlanta, GA), ACM. 2011. 457-458.

**Hsiao, C.-P.** Johnson, B. R. (2011) TiMBA -- Tangible User Interface for Model Building and Analysis. Human-Computer Interaction in Lecture Notes in Computer Science, 6762, pp. 43-52.

**Hsiao, C.-P.** Johnson, B. R. (2011) Combine Digital & Physical with Vision-Based Tangible User Interfaces. In the Proceedings of CAAD Futures 11' (Liege, Belgium). pp. 785-800.

Fritz, R. **Hsiao, C.-P.**, and Johnson, R. B. (2009) Gizmo & WiiView. In the Proceedings of ACADIA 09' reForm (Chicago). pp. 278-280.

## Book Chapter, Journal Paper, and Thesis

Davis, N. **Hsiao, C.-P.** (2015) An Enactive Model of Creativity for Computational Collaboration and Co-creation. In *Creativity in the Digital Age*, Springer. pp 109-133.

Kim, H. **Hsiao, C.-P.** and Do, Ellen Y.-L. (2012) Home-based Computerized Cognitive Assessment Tool for Dementia Screening, *The Journal of Ambient Intelligence and Smart Environments*. pp. 429 - 442.

**Hsiao, Chih-Pin.** Vision-based Tangible User Interfaces for Architecture. Master Thesis. University of Washington, 2009.

## Presentations & Activities

- Served as Student Volunteer for ACM TEI 15'
- Present and Demo Tactile Teacher for ACM TEI 15'
- Served as reviewer for Design Scripting with Revit/Dynamo and Python class in Fall 2014
- Served as reviewer for Interactive and Wearable Product Design class in Fall 2014
- Served as reviewer for Chinese CHI 15', 14'
- Served as reviewer for ACM TEI 15'
- Served as reviewer for ACM CHI 15' and 13'
- (2014) Served as reviewer for ACM DIS 14'
- Present and Demo the Digital Box and Block Test for IEEE PerCom 13'
- (1/18/2013) Gave a talk in Design Computing Forum at Georgia Tech about "The Alternative Ways of Interacting with Computer Models"
- (11/9/2012) Gave a talk in Aware Home Research Initiative about "The Digital Box and Block Test."
- (1/26/2011) Moderated the session "Sensing and Interactions" in TEI 11', ACM.
- Participate the Graduate Consortium session in ACM C&C 11'
- Served as reviewer for ACM C&C 11'
- (2003) President, National Cheng Kung University Symphony Orchestra
- (2002 – 2003) Music Director, National Cheng Kung University Symphony Orchestra

## Students Mentored

David Park	M.S. in Human Computer Interactions, class of 2011
Binjie Sun	Master in Industrial Design, class of 2012
Richard Li	B.S. in Computer Science, class of 2012
Samantha Wang	B.S. in Electrical Engineering, class of 2011
Xinyan Yan	PhD in Computer Science, class of 2015

Zhao Chen          Visiting student (currently attending PhD at University of Washington)

Takahiro Ito        Visiting student

## **Honor, Awards, Scholarships**

2013 Selected as IEEE PerCom conference student scholarships

2012 Selected as ACADIA conference student scholarships

2010 Awarded by **Google Device Seeding Program for Top Android Market Developers**

2003 Selected as NCKU Chinese Outstanding College Youths of 2003

2003 Awarded as First Class Honor when leading NCKU Winds Orchestra in National Music Competition