CHUAN-CHE (JEFF) HUANG

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RESEARCH INTERESTS

Smart Environments, Smart Homes, Personalized Ubiquitous Assistants

EDUCATION

University of Michigan, School of Information — **Ann Arbor, MI**
Ph.D. Candidate — *Aug 2013 – Present*
Advisors: Mark W. Newman (primary), Sile O'Modhrain (co-advised while Newman on sabbatical)

University of Michigan, School of Information — **Ann Arbor, MI**
M.S. Information, Human-Computer Interaction, — *May 2013*

National Tsing Hua University, Computer Science Department — **Hsinchu, Taiwan**
B.S. Computer Science, — *June 2010*
Graduated with Highest Distinction (Overall Ranking: 1st)

WORK EXPERIENCE

Character-AI Engineer Intern — *May 2017 – Aug 2017*
Jibo Inc.,
- Improved Jibo's abilities related to social and emotional expressions, chatting and other software components relevant to Jibo's autonomous behaviors.
- Designed and conducted a research study to improve Jibo's proactive behaviors *(i.e., when to proactively interact with users)* via in-the-wild data collection, sensor fusion and machine learning.

Engineering/Research Intern — *May 2015 – Aug 2015*
Samsung Research America, Next Experience Display Lab
- Designed and prototyped Samsung's future 3-5 years IoT and smart home products with a team of industrial designers, design engineers and UX professionals.
- Designed and built a sensor network and context recognition infrastructure for rapid exploration of smart home applications.
- Designed and prototyped a smart home application to encourage physical fitness.

Graduate Student Research Assistant — *Oct 2011 – Present*
University of Michigan, School of Information

Graduate Student Instructor*, University of Michigan, School of Information*
SI 612, Pervasive Interaction Design (Best TA/GSI Award) — *Fall 2016, Fall 2017*
SI 501, Contextual Inquiry — *Winter 2014, Winter 2015*

Software/Hardware Developer, Interaction Designer *Jun 2012 – Jan 2013*
University of Michigan, Office of Enabling Technologies
- Designed and built an architectural-scale interactive installation as a landmark for a university research complex.

HONORS AND SCHOLARSHIPS

UMSI Graduate Student Instructor of the Year Award, 2018
Re: Defining Art Award, 2016
Chia-Lun Lo Fellowship Recipient, 2014
Rackham Conference Travel Grant, 2013, 2014, 2015, 2017, 2018
Kaggle Competition for the Course SI-721 Data Mining, Third Place, 2014
UMSI ExpoSItion Academic/Research/Innovation Category 1st Prize, 2013, 2015, 2016, 2017
School of Information Merit Scholarship Recipient, 2011-2012
Member of Phi-Tau-Phi Scholastic Honor Society (Top 1% Students), 2010
Graduated with the Highest Distinction in Computer Science, NTHU, June 2010
ZyXEL Scholarship, ZyXEL Communication Corporation, 2009
Academic Achievement Award (Ranked 1st Student), NTHU, 2007, 2009
Academic Achievement Scholarship (Ranked top 3 Students), NTHU, 2007, 2008, 2009
Industrial Technology Research Institute Scholarship, 2007, 2008, 2009

PUBLICATIONS

- Jones J.**, Huang C.-C.,** Lin C., Martell A., He S., Avle S., The Hidden Cost to Do-It Together: Lessons from a Research Makerspace, CHI'19 (under review)
- Paruthi G., Raj S., Back S., Wang C., **Huang C.-C.**, Chang Y.-J., Newman M., Heed: Exploring the Design of Situated Self-Reporting Devices, IMWUT'18.
- **Huang C.-C.**, Liang S.-Y., Wu B.-H., Newman M., Reef: Exploring the Design Opportunity of Comfort-Aware Eco-Coaching Thermostats, DIS'17.
- **Huang C.-C.**, Yang R., and Newman M., The Potential and Challenges of Inferring Thermal Comfort at Home Using Commodity Sensors, UbiComp'15.
- **Huang C.-C.**, Lin Y.-J., Zeng X., Newman M., and O'Modhrain S., Olegoru: A Soundscape Composition Tool to Enhance Imaginative Storytelling with Tangible Objects, TEI '15 (WIP).

RESEARCH PROJECTS

Reef: Explore the Design of Comfort-Aware Eco-Coaching Thermostats
- Designing and building a system that can infer occupants' thermal comfort using off-the-shelf wearable and in-home sensors.
- Creating an intelligent thermostat that can understand occupants' comfort in order to better adjust indoor temperature and encourage savings.

Scilla: Leverage Self-Experimentation Framework to Support People with Spinal Cord Injury and Disease to Identify Individualized Baclofen Dosage

- Designing and building a mobile application to facilitate people with spinal cord injury and cerebral palsy to find the appropriate dosage of medication to minimize spasticity pain and side effects.

Proximals: Proximity-aware Character-based Toys to Facilitate Imaginative Play

- Designing and building a set of proximity-aware stuffed animals, objects and smartwatches for children age between 4-7 to facilitate social and emotional learning and imaginative play.
- Explore the use of smartwatches as scenario facilitators, precise UWB for advanced proximity-based interaction, and study the feasibility and usability of multi-agent (multiple interactive stuffed animals) interaction.

LEADERSHIP EXPERIENCE

Founder & President of DoIIIT Studio, University of Michigan *Apr. 2015 – Nov. 2017*

- Led a 20+ members makerspace within U-M that leverages making and design for knowledge inquiry, facilitating 5 paper submissions to top-tier conferences (2 accepted, 3 pending).
- Wrote grant proposal and led fundraising activities that resulted in $20k+ of funding.
- Hosted diverse activities including a two-day hackathon-like workshop with Lilypad Arduino inventor Leah Buechley, as well as bi-weekly meetup events.
- Collaborated with U-M to design and build the first interactive gallery space for the department, showcasing student projects relevant to Internet of Things.

Doctoral Executive Committee, *Jun. 2015 – Jun. 2016*
School of Information, University of Michigan

Second-in-command of a Combat Engineering Company, R.O.C. Army *Aug. 2010 – Jul. 2011*

- Led a 124-soldiers combat engineering company with the company commander.
- Received a honorable medal for my contribution in managing the company.

President of Campus Evangelical Fellowship, *Jun. 2008 – Jun. 2009*
National Tsing Hua University

- Led a 45+ members fellowship to serve undergraduate students and developed teaching programs for children from disadvantaged families.
- The fellowship climbed to the best place in its 10 years history in the school's annual intramural club evaluation rankings during my presidentship.

INVITED PRESENTATIONS

National Tsing Hua University, ISA Seminar *Jun. 2016*
Bespoke Animism: The Design Of Intelligent Things That Are Made to Fit Us

University of Michigan, SI612 Pervasive Interaction Design *Oct. 2015*
Animism: Context-Aware Computing

University of Michigan, SI612 Pervasive Interaction Design *Mar. 2015*
Sensor Follow Function, Function Follow Sensor

SERVICE

Selected as PC for:

TAICHI'16, TAICHI'18

Student Volunteer
ACM CHI '16

Selected as Reviewer for:
ACM CHI '16, ACM DIS '16, ACM DIS'18, ACM IMWUT'17, ACM IMWUT'18

SKILLS

Data Science & Machine Learning
Experienced in Pandas, scikit-learn, D3.js, conda, jupyter.

Software Development & Data-Driven Applications
Full-Stack & Mobile Development. Experienced in Python, Django, Swift, C/C++, JavaScript, TypeScript, React.js, React Native, Redis, RabbitMQ, MySQL, MongoDB, GCP, AWS.

Hardware Prototyping
Rapid Electronics Prototyping, Arduino, Raspberry Pi, Particle

User Experience Skills
Usability Testing, Interview, Survey, Log Analysis, Diary Study, Experience Sampling Method, Contextual Inquiry, Personas, Scenarios, Experience Prototyping

Creative Authoring
Sketch App, inVision, Adobe illustrator.

REFERENCES

Mark W. Newman
Associate Professor, University of Michigan, School of Information
Email: mwnewman@umich.edu

Tawanna Dillahunt
Assistant Professor, University of Michigan, School of Information
Email: tdillahu@umich.edu

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