

KITTY YEUNG, PH.D.

Founder, Senior Research Program Manager & Creative Technologist
Fashion Tech, Quantum Computing, Digital Transformation, Internal Startup

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--EXPERIENCE--

MICROSOFT, Sunnyvale, CA 2018 – Present

Fashion Digital Transformation | Internal Startup Founder (2018 - present)

- Leading a team of >50 software engineers, data scientists and business leads to produce a platform on Azure that drives [digital transformation of fashion supply chain and retail](#), applying cutting-edge technologies to solve pain points in the garment industry, reducing waste and pollution, and partnering with fashion brands;

Quantum Systems | Senior Research Manager & Creative Technologist (2020 - present)

- Growing quantum computing developers through content creation and partnerships.
- Leading internal [education of quantum computing](#) concepts, covering physics, mathematics, hardware and software; currently writing a tutorial book on quantum computing and Q# for the public.

The Garage – Silicon Valley | Senior Research Manager & Creative Technologist (2018-2020)

- Managed The Microsoft Garage program – a global incubation program supporting internal startups and engaging with all teams and employees to generate creative innovations, run experiments to test solutions and scale to benefit millions of people and other organizations in the world. Managed the largest Microsoft Bay Area [engineering symposium](#) and the biggest global private hackathon.
- Established collaborations with industry partners in the ecosystem, open-source communities, universities, startups and hardware manufacturers.
- Launched two new technical business tracks – fashion technology and quantum computing.
- Brought The Garage Internship Program pilot to Silicon Valley; Directed the intern cohort to collaborate with the Azure Machine Learning and Data Box Edge teams to create an IoT Edge Solution for the Jetson Nano involving Azure Storage and ONNX Runtime running on ARM64 and shipped [open-source tutorial](#); Changed old perception of Microsoft to an innovative environment that attracts new generations of talents.

ART BY PHYSICIST, Alameda, CA 2015 – Present

Tech + Art Studio | Founder, CEO & Chief Designer (2015 – Present) www.kittyyeung.com

- Collaborating with industry partners on producing programmable clothing, computational textiles and wearable devices; Embedding technologies in garment designs, including cloud and edge computing, 3D-printed, heart-rate-monitored, solar-powered, GPS-tracked, gesture-, BLE- and EEG WiFi headset-controlled garments; Explored ROS, machine learning and computer vision in wearables, robotics, AR/VR and IoT applications;
- Have been featured in technology, fashion and art news; Showcased embedded-system tech-fashion in exhibits including San Francisco Fashion Week, CODAME, Hackaday SuperCon, Maker Faire, San Jose Museum of Quilts & Textiles and MakeFashion; Spoke in forums, classrooms and public events, and conducted workshops including demos at NASA Ames Research Center.

INTEL CORPORATION, Santa Clara, CA 2015 – 2018

Modular Innovation | Research Scientist, UX Design & Outreach (2017)

- Prototyped on embedded systems and single board computers such as Edison, Curie and Joule, involving mobile communication, sensors, motion, audio, vision and machine learning;
- Identified and solved UX problems; Influenced engineering and marketing teams as a designer addressing user needs;

--EDUCATION--

HARVARD UNIVERSITY

Ph.D.

Applied Physics – 2015

Thesis: Engineering

Plasmonic Waves in Two-

Dimensional Electron

Systems

Defence slides:

www.slides.com/kittyyeung

UNIVERSITY OF CAMBRIDGE

M.Sci., M.A. & B.A.

Natural Sciences - 2010

Class 1

Gonville & Caius College

Top Rank

--CERTIFICATES--

COURSERA DEEP LEARNING

1. Structuring Machine Learning Projects
2. Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization
3. Neural Networks and Deep Learning

--SKILLS--

DESIGN

Photoshop, Adobe Illustrator, Lightroom, Corel Painter, CorelDraw, ArtRage, SketchUp, SolidWorks, Fusion 360

METHODOLOGIES

Engineering & Science

theoretical derivation, device & component design, simulation, layout & schematics, cleanroom fabrication, measurement design, data analysis, machine shop

UX Research & Design

design thinking, user interviews, market

- Created open-source instructions for consumers on accelerometer, Bluetooth and pattern matching engine; Integrated engineering with fine arts; Made designs that increased product visibility in market and featured in maker and developer publications;
- Founded and led team to build smart-accessories and medical devices. U.S. Patent <10237393> granted: Safety systems and methods that use portable electronic devices to monitor the personal safety of a user.

Silicon Photonics | Intel Labs Research Scientist (2017 – 2018) & Product Engineer (2015-2017)

Researched and designed photonic building blocks, generating Intel IP for photonics and Data Center architecture. Contributed to launch of Intel Silicon Photonics 100G Optical Transceivers. Led design, die-, module- & wafer-level testing, analysis, integration and management for 400G; Supported system level and quality & reliability; Solved engineering and design issues, innovated on testing methods and delivered data that influenced business decisions.

IBM T. J. WATSON RESEARCH CENTER, Yorktown Heights, NY 2014

Silicon Photonics | Intern

Experimented and analyzed IBM silicon photonic chips with CMOS-integrated monolithic circuits; Set up automated systems for component testing; Received IBM T.J. Watson Best Summer Poster Award.

research, user persona, mockups, prototyping, visual design, wireframing, Out-of-the-Box UX

PROGRAMMING TOOLS

MatLab
 Arduino
 Q#
 Python
 C++

HARVARD UNIVERSITY, Cambridge, MA 2009 – 2015

Ph.D. Research Assistant (2010 – 2015) | Prof. Donhee Ham's Lab

Invented from scratch GHz, THz, IR plasmonic circuits in 2D electron gas and graphene metamaterials for band gap filtering, modulating, switching and bio-chemical sensing; Received 2012 ISSCC ADI Outstanding Student Designer Award and 7 publications.

Graduate Student (2010 – 2011) | Prof. Evelyn Hu's Lab

Designed, fabricated and experimented on tunable plasmonic resonance nano-cavities and photonic crystals for subwavelength confinement applications; Received 1 award and 1 publication.

Visiting Fellow (Summer 2009) | Prof. Isaac Silvera's Lab

Measured high-pressure melting-line of hydrogen for solid hydrogen creation; Received 2 awards.

UNIVERSITY OF CAMBRIDGE, Cambridge, UK 2007 – 2010

Cavendish Laboratory | Student Researcher | Quantum Matter Group & Optoelectronics Group and Surface, Microstructure and Fracture Group

Engineered and conducted low-temperature experiments on optical data storage media and quantum materials. Received 1 publication.

GLOBAL TELECOM TECHNOLOGY HK LIMITED, HK 2004 – 2006

Part-time Trainee

Developed water and impact-proof GPS wearables for adventurers on rafting and hiking trips.

--SELECTED PAST AND UPCOMING PUBLIC TALKS AND EXHIBITIONS--

May 7-8, 2020 Interlaken, Switzerland	League of Leading Ladies Conference 2020: IT'S A SMART WORLD. Keynote http://leagueofleadingladies.com/
February 28, 2020 Palo Alto	Stanford University Arts Class Tech-Fashion lecturer
February 22, 2020 Los Angeles	SpaceportLA 3D printing workshops and panelist https://www.matterhackers.com/events
November 20, 2020	IDTechEx Printed Electronics Europe E-textiles talk " Demands And Opportunities In The Tech-Fashion Industry "

Santa Clara	Press release Wearable Technology Insights & Printed Electronics World
November 15, 2019 Los Angeles	Hackaday Supercon Workshop " Introduction to Quantum Computing "
October 17-20, 2019 Rome	Rome Maker Faire – The European Edition Opening ceremony keynote EdTech talk "Making Fashion with Technology"
October 1-4, 2019 Orlando	Grace Hopper Conference Hardware track committee and speaker " How to turn creativity into productivity? "
September 14-16, 2019 New York	Fashion Tech Week New York Speaker and designer " Demands and Opportunity in the Fashion Industry "
April 10-11, 2019 Berlin	IDTechEx Printed Electronics Europe Corner Stone speech "Applying emerging technologies in wearables and solving challenges in the garment manufacturing supply chain" https://www.idtechex.com/printed-electronics-europe/show/en/
March 1, 2019 San Jose	TECHstyle Art Biennial (ITAB) exhibition, San Jose Museum of Quilts & Textiles Exhibit "technology interpreted by textile artists" https://www.squiltmuseum.org/
Feb 11, 2019 San Francisco	I Chose STEM - Microsoft conference in support of International Day of Women and Girls in STEM Keynote speaker "Applying STEM – a journey to Ikigai" https://www.microsoft.com/en-us/research/event/i-chose-stem/#!speakers
Jan 27, 2019 Toronto	Women in Science and Engineering National Conference Keynote speaker https://www.conference.wiseuoft.org/
Jan 16, 2019 Beijing	National Astronomy Observatory of China, Youth Innovation Promotion Association CAS Talk "Marriage between Science and Art and the Now and Future of the Wearables Industry"
Jan 11, 2019 Palo Alto	The Senior Reflection, Stanford Biology Department Talk on integration between science, engineering, design and art https://web.stanford.edu/~suemcc/TSR/
Nov 3, 2018 Los Angeles	Hackaday Superconference Talk + demo "Tech-Fashion Designs and the Wearables Industry" Recording: https://www.youtube.com/watch?v=KTL_1zz_cRc&t=516s
Sept 17, 2018 Berkeley	Jacobs Institute for Design Innovation, College of Engineering, UC Berkeley Design field notes speaker series " Tech-Fashion Designs and the Wearables Industry "

--SELECTED MEDIA COVERAGE--

More thoughts on lean, creativity- and need-driven manufacturing <https://artbyphysicistkittyyeung.com/in-the-media/>

Microsoft In Culture [The Future of Fashion is Tech-Empowered Customization](#)

Sixth Tone [The Savvy Creative Tinkering with High-Tech Fashion](#)
Microsoft Bay Area [Understanding Quantum Computing and Q#](#)

Hackaday Supercon	Kitty Yeung on Tech-Fashion Designs and the Wearables Industry
Q# Advent Calendar 2018 The Visual Studio Blog	Invited article on Dec 20, 2018: A cat's Thought Experiment on quantum interference and measurements
Make: live learning workshop	Wearable Tech 101
Arm Innovation Blog featuring Arm Innovators	Q&A with Kitty Yeung: When Physics, Art and Technology Collide
LinkedIn	official WeChat account interview
Women of Wearables	WoW Woman in Fashion Tech Kitty Yeung, senior program manager and creative technologist at the Garage, Microsoft, fashion designer, artist and musician
Gonville & Caius College University of Cambridge	When Physics Fuses with Fashion
Harvard University SEAS Alumni Profile: Kitty Yeung, Ph.D. '15	Fashion technologist works where art and physics collide

--ACADEMIC PUBLICATIONS--

- [9] **Kitty Y. M. Yeung**, Jingyee Chee, Yi Song, Jing Kong and Donhee Ham, *Symmetry Engineering of Graphene Plasmonic Crystals*, *Nano Letters*, **15**, 5001 (2015).
- [8] Jacqueline M. Cole, **Kitty Y. M. Yeung**, Giuseppina Pace, Sven O. Sylvester, Dirk Mersch and Richard H. Friend *In situ synthesis, crystallisation, and thin-film processing of single crystals of trans-[Ru(SO₂)(NH₃)₄(H₂O)][p-TolSO₃]₂ bearing SO₂ linkage photo-isomers: towards optical device applications*, *CrystEngComm*, **17**, 5026 (2015).
- [7] **Kitty Y. M. Yeung**, Jingyee Chee, Hosang Yoon, Yi Song, Jing Kong and Donhee Ham, *Far-infrared Graphene Plasmonic Crystals for Plasmonic Band Engineering*, *Nano Letters*, **14**, 2479 (2014).
- [6] Hosang Yoon, **Kitty Y. M. Yeung**, Philip Kim, and Donhee Ham, *Plasmonics with two-dimensional conductor*, *Philosophical Transactions of the Royal Society A*, **372**, 20130104 (2014).
- [5] Guangyu Xu, Jeffrey Abbott, Ling Qin, **Kitty Y. M. Yeung**, Yi Song, Hosang Yoon, Jing Kong and Donhee Ham, *Electrophoretic and field-effect graphene for all-electrical DNA array technology*, *Nature Communication* **5**, 4866 (2014).
- [4] **Kitty Y. M. Yeung**, Hosang Yoon, William Andress, Ken West, Loren Pfeiffer and Donhee Ham, *Two-Path Solid-State Interferometry Using Ultra-Subwavelength 2D Plasmonic Waves*, *App. Phys. Lett.* **102**, 021104 (2013).
- [3] Hosang Yoon, **Kitty Y. M. Yeung**, V. Umansky, and Donhee Ham, *A Newtonian approach to negative refraction*, *Nature*, **488**, 65 (2012).
- [2] William Andress, Hosang Yoon, **Kitty Y. M. Yeung**, Ling Qin, Ken West, Loren Pfeiffer and Donhee Ham, *Ultra-subwavelength two-dimensional plasmonic circuits*, *Nano Letters*, **12**, 2272 (2012).
- [1] Kasey J. Russell, **Kitty Y. M. Yeung** and Evelyn L. Hu, *Measuring the mode volume of plasmonic nanocavities using coupled optical emitters*, *Phys. Rev. B*, **85**, 245445 (2012).