Curriculum Vitae

ELENA CHONG LOO

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EDUCATION

2016 **ROSE-HULMAN INSTITUTE OF TECHNOLOGY** — TERRE HAUTE, IN, USA
Bachelor of Science in **Electrical Engineering** **Robotics** and **Mathematics** Minors
SENACYT-IFARHU Undergraduate Scholarship (Panama Government)

2012 **SUN YAT-SEN UNIVERSITY** — GUANGZHOU, CHINA
Intensive Studies in the Mandarin Language
Certificate of Completion on Basic Mandarin

2011 **INSTITUTO PANAMERICANO** — PANAMA CITY, PANAMA
Secondary Education
High School Diploma with Specialization in Science

RESEARCH AND WORK EXPERIENCE

STUDIOFAB PROGRAM COORDINATOR
INFOPLAZAS AIP
Panama, Panama 2017

Leading the National Program of Digital Fabrication and Maker Culture with a budget of $525,000 in Panama.
Developing a long term plan for the establishment of fabrication labs and Maker education programs across the country.
Implementing the Maker education programs in over 230+ InfoPlaza centers.

FOUNDER AND CEO
TINKERALL, S.A.
Panama, Panama 2016

Teaching people the emerging technologies that can empower them by designing educational curriculum based on "learning by doing" for schools, promoting Maker culture, organizing the annual Maker Day event, and creating workshops on digital fabrication, electronics, programming, and robotics.

UNDERGRADUATE RESEARCHER
Rose-Hulman Institute of Technology
Biology and Biomedical Eng. Department
Terre Haure, IN, USA 2015

Performed user-studies for Steady State Visually Evoked Potential (SSVEP) research, and used electroencephalography (EEG) to identify signals for brain-machine interface.
Advisor: Dr. Alan Chiu

RESEARCH ASSISTANT (CO-OP)
Max-Planck-Institut für Informatik
Embodied Interaction Group
Saarbrucken, Germany 2015

Presented a new technique for customizing 3D printed objects using an embedded heating strip.
Co-authored paper accepted to ACM CHI 2016. [**HONORABLE MENTION**]
Advisor: Dr. Juergen Steimle Mentor: Daniel Groeger

RESEARCH INTERN
Wyss Institute for Biologically-Inspired Engineering at Harvard SEAS
Lewis Research Group - VOXEL8
Cambridge, MA, USA 2014

Designed, fabricated, and tested embedded 3D printed electronic devices with vertical conductive traces to prove the technology behind Voxel8.
Improved printing process and 3D printer design.
REU Funding: Wyss Institute for Biologically Inspired Engineering
PI: Dr. Jennifer Lewis Mentors: Michael Bell and Travis Busbee

ENGINEERING INTERN
Electroninks Inc.
Shenzhen, China 2014

Sourced and inspected electronic components for the company's first batch of conductive-ink pens and auxiliary circuits.
Mentors: Michael Bell, Jack Minardi, and Analisa Russo

UNDERGRADUATE RESEARCHER
Rose-Hulman Institute of Technology
Physics and Optical Eng. Department
Terre Haure, IN, USA 2013

Investigated the process of growing carbon nanotubes on silicon wafers. Performed standard microelectronics cleanroom procedures such as photolithography, developing, and etching.
Advisor: Dr. Scott Kirkpatrick

UNDERGRADUATE RESEARCHER
Rose-Hulman Institute of Technology
Physics and Optical Eng. Department
Terre Haure, IN, USA 2012

Performed Asteroid Photometry and gathered data on the results. Co-authored a report on the results of the Asteroid Photometry data published in the Minor Planet Bulletin.
Advisor: Dr. Richard Ditteon

SELECTED PROJECTS (elenachong.com/projects)

WIRELESS POWER TRANSFER ENHANCER USING MAGNETIC METAMATERIALS

Wireless Energy, Metamaterials Design and PCB Fabrication

- Adapted the design of a wireless power transfer enhancer using magnetic metamaterials.
- Applied Short-Open-Load-Thru calibration on the spectral analyzer for the measurement of S-Parameters.
- Achieved power transfer efficiency by 35% at around 220MHz based on S21 results.

WEARABLE LEAP-MOTION CONTROLLED EXPRESSIVE DRESS [HACKILLINOIS 2015 Winner]

Human-Computer Interaction, Design and Prototyping, Wearable Computing

- Led a team of three in prototyping a functional, online LED dress controlled by hand gestures using a LEAP-MOTION.
- Configured the hardware communication of the Raspberry Pi with the LED strip and designed the “look” of the dress.
- Awarded the “Trunk Club's Most Innovative Way to Connect to Someone” prize.

ROSE MAKERLAB ORGANIZATION [Founder and President 2014-2015]:

Maker Community, Fablab, Educational, Collaborative

- Led an executive team composed of seven officers and three advisors.
- Provided tools and resources in a collaborative environment for over 120+ students.
- Gained support from more than five companies to help grow the organization in the first year.

PUBLICATIONS

2016 ***"HotFlex: Post-print Customization of 3D Prints Using Embedded State Change"***
Daniel Groeger, **Elena Chong Loo**, Jürgen Steimle.
Proceedings of the 2016 ACM CHI Conference on Human Factors in Computing Systems, San Jose, California, USA, May 7-12, 2016.
CHI 2016 Honorable Mention Award (Top 4%).

2013 ***Minor Planet Bulletin, Vol 40, Number 3, A.D. 2013 July-September***
Gary Simpson, **Elena Chong**, Michael Gerhardt, Sean Gorsky, Matthew Klaasse, Brian Kodalen, Faye Li, Luke Mader, Robert Moore, Rachel Vinson, Richard Ditteon.

POSTERS AND PRESENTATIONS

2015 "Evaluation of SSVEP Stimulation Pattern using Canonical Coherence Analysis".
Xioyin Ling, **Elena Chong**, Alan Chiu.
Department of Biomedical Engineering, Rose-Hulman Institute of Technology.
Poster presented at: End-of-Quarter Symposium, May 22, 2015.

2014 "3D Printing Electronics: Testing of conductive ink in vertical printing and embedded devices and hardware development of 3D printing electronics".
End-of-Program REU Seminar Presenstation, Harvard University, Cambridge, Massachusetts, August 2014.

AWARDS AND HONORS

2016 *SIX CENTRAL AMERICAN MAKERS.* **FORBES CentroAmerica and Mexico**, NOV-DEC 2016 edition

2016 *BEST PAPER HONORABLE MENTION AWARD.* **ACM CHI'16**

2015 *HONOR KEY AWARD RECIPIENT.* **Rose-Hulman Student Government Association**

2015 *TRUNK CLUB'S MOST INNOVATIVE WAY TO CONNECT TO SOMEONE.* **HackIllinois**

2014 *BEST NEWS OR FEATURE SERIES AWARD.* **Indiana Collegiate Press Association**

2014 *HARVARD SEAS - REU FUNDING*. **Wyss Institute for Biologically-Inspired Engineering**

2012 *PANAMANIAN UNDERGRADUATE SCHOLARSHIP OF EXCELLENCE.* **SENACYT-IFARHU**

2010 *SILVER MEDAL (2nd Place).* **Panamanian National Biology Olympiad**

INVITED TALKS AND DEMONSTRATIONS

2017

[7] **Centro Cultural Chino Panameño**, Panama, Panama, May. Invited by Jonathan Kernahan

[6] **IEEE-WIE, Universidad Tecnológica de Panamá**, Panama, Panama, April. Invited by IEEE-WIE, UTP

[5] **Universidad Católica Santa María La Antigua**, Panama, Panama, March. Invited by Carlos Betancourt

[4] **Colegio Hector Gallego**, Veraguas, Panama, September. Invited by Florentina Gutiérrez

2016

[3] **Panama Christian Academy**, Panama, Panama, September Invited by Eduardo Chung

[2] **Radio Mía**, Panama, Panama, August. Invited by Víctor López

[1] **Instituto Panamericano**, Panama, Panama, August. Invited by Norberto Rosales

WORKSHOPS AND TEACHING

2017

[9] ***Intro to 3D modeling and 3D Printing***. Workshop, Encuentro Regional Panamá, October 2017.

[8] ***Robotics using Arduino Platform***. Workshop, Universidad Tecnológica de Panamá, September 2017.

[7] ***Introduction to Arduino Platform***. Workshop, Universidad Católica Santa María La Antigua, September 2017.

[6] ***Intro to 3D modeling and 3D Printing***. Workshop, Encuentro Regional Chitré, InfoPlazas AIP, September 2017.

[5] ***Intro to 3D modeling and 3D Printing***. Workshop, Encuentro Regional Chiriquí, InfoPlazas AIP, September 2017.

[4] ***Teaching and Using Arduino in school.*** Workshop, Centro Cultural Chino Panameño, March 2017.

[3] ***Basic Arduino 1***, Classes, Tinkerall, Monthly since February 2017.

2015

[2] ***Introduction to Soldering***. Workshop, the MakerLab, Rose-Hulman Insitute of Technology. December 2015.

[1] ***Maker Day***. Workshop, the Embodied Interaction Group, Max Planck Institute for Informatics, Germany, 2015.

TECHNICAL AND PROFESSIONAL SKILLS

PROGRAMMING & MARKUP LANGUAGES:	C/C++, HTML/CSS, JAVA, LaTeX, PYTHON
SOFTWARE:	Adobe Creative Suite, Android Studio, Arduino/Processing, CST Microwave Studio, Matlab, Rhinoceros 3D with Grasshopper, SolidWorks, Unity
HARDWARE:	Microcontrollers (Raspberry Pi, Arduino, PIC), PCB Design and Fabrication (DesignSpark PCB), circuit design and debugging (OrCAD Capture/PSpice), Measurement (oscilloscope, spectral analyzer)
FABRICATION:	3D printing, laser cutting, MEMS fabrication, milling, photolithography, printed electronics, soldering, welding
OPERATING SYSTEMS:	Linux (Ubuntu, Raspbian), Windows
LANGUAGES:	Cantonese (fluent), English (fluent), Spanish (fluent), Mandarin (Basic)
ADDITIONAL KNOWLEDGE:	Augmented interfaces, haptic technology, human-computer interaction, embedded systems, filmmaking, microwave device fabrication, metamaterials, multimodal interaction, photography, robotics, teaching, technical writing, wearable computing, web design, wireless energy harvesting

PAST EXTRACURRICULAR ACTIVITY

Rose MakerLab 2015 - 2016
Founder and President

Eta Kappa Nu 2014 - 2016
Member and Webmaster

RISE 2013 - 2015
Marketing Director

The Rose Thorn 2012 - 2015
News Editor

Robotics Team 2012 - 2014
Public Relations Officer

MEMBERSHIP

Alpha Lambda Delta Honor Society
Eta Kappa Nu (IEEE-HKN) Honor Society
Pi Mu Epsilon Honor Society
Blue Key National Honor Fraternity
Institute of Electrical and Electronics Engineers (IEEE)
Association for Computing Machinery (ACM)
Order of the Engineer.

HOBBIES AND PASSIONS

Writing and filming screenplays
Playing guitar and keyboard
Connecting devices to the internet
Working on cool projects (especially with the Raspberry Pi)
Going hiking and outdoor adventure
Traveling to foreign countries and learning about their culture
Practicing self-defense (Krav Maga, and Wing Chung)
Training for 3K, 5K, 10K, and hopefully marathons and triathlon
Sharing my knowledge and my travel stories with people
Keep learning something new every day