

## **Yinbo Chen**

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## **Education**

Jan. 2021 - May.2023	<b>Master-degree in Computer Science and Software Engineering</b> Auburn University, Auburn, AL
Jan. 2019 - May 2020	<b>Grad Non-degree in Computer Engineering</b> University of Colorado Boulder, Boulder, CO
June 2014	<b>M. S in Industrial Design Engineering</b> Jiangnan University, Wuxi, China
June 2009	<b>B. S in Industrial Design</b> Jiangnan University, Wuxi, China

## **Project Experience**

### **VR Gloves Development (current)**

To develop VR gloves for AU RBD library. This project involved hardware design and software firmware development. The Hardware design includes the blending sensor design and assembling of the glove attachments design. Software design based on C++ and C language which contains an Arduino firmware development as well as the PC driver development.

### **AU RBD MakerSpace 3D-Printing Manager System**

Develop two webpage-based management systems. One is for monitoring print jobs' status and storing job data on the local server. Another is to record material usage for ordering purposes. Both systems are based on PHP and MySQL.

### **AU Batch Cpu Scheduling Simulation**

The project is based on C language. To simulate multiple CPU scheduling schemes on Linux OS. The main purpose is to get a better insight into CPU scheduling algorithms as well as share information between multiple CPU processes/threads for improving computation performance.

### **Application for Federated Learning**

To develop a user-friendly GUI application that embedded five popular Federated Learning algorithms using Python, by giving each one individual access to reduce the complexity of parameter tuning and setting.

### **Application for Wrong-way Detection**

The project is based on Machine Learning object detection (YOLO) using Python. To design an application that automatically detects wrong-way driving based on the input video stream and counts the number of cars in a specific period of time frame.

### **Application for Home-moving Based on R-CNN**

This application is based on a Region-based Convolutional Neural Network using Python. The main purpose is to measure the dimensions of each item in a room. The output is a list and a suggestion of the maximum value of a portable container. Giving convenience for self-service home moving.

### **Sign Language Recognition Based on CNN**

Develop a real-time application for sign language recognition based on Convolutional Neural Network. It aims a portable device (limited computational performance) and develops a lightweight application with reasonable real-time detection accuracy.

### **Rubik's Cube Solver**

Develop a Python, URL-based application (with restricted rotational movements) to solve a random Rubik's cube and returns a correct solving solution.

### **Computer Vision Tools development**

Develop a MATLAB application that includes multiple image process functions (from scratch). Such as image segmentation, image clustering, stereo vision, disparity depth computation, edge detection, image filters, image warping, and so on.

### **Web Application Development**

Develop a JSP, XML based online- exam application for kids' remote education during COVID. The application can read local question repository XML format and randomly generates test and posts it online. It also includes the performance metrics to measure an individual's performance after each test.

## **Research Experience**

Jan. 2021 – May. 2023

### **Graduate Assistant**

Innovation & Research Commons, Auburn University Libraries,  
Auburn, AL

Advisor: Gary Hawkins

My research responsibility was separated into two main parts. The first part was designing a series of applications for internal usage purposes to improve 3D printing management which includes the SQL website-based 3D printing database system and the inventory management system. The second part was involving funded research projects and providing technical support such as Class-A modeling, precision printing (dimensional accuracy  $\pm 0.02$  mm, weight accuracy  $\pm 1$  g), and hardware and application development (based on VR technology).

Sep. 2011 – June 2014

### **Graduate Research Assistant**

System Integration Innovation Studio, School of Design, Jiangnan University, Wuxi, China

Advisor: Prof. Linghao Zhang

My main responsibility was designing commercial products and performing user research in the medical field. I also responded to collecting user data and feedback and providing product solutions. I assisted the advisor with his academic publications. I have published three first-author papers while I was an assistant at this studio.

Sep. 2008 – June 2009

### **Undergraduate Research Assistant**

System Integration Innovation Studio, School of Design, Jiangnan University, Wuxi, China

Advisor: Prof. Linghao Zhang

My main responsibility was testing instruments for graduate students and professors.

## **Work Experience**

Jan 2021 - May. 2023

### **Graduate Assistant at Innovation & Research Commons**

Auburn University Libraries, Auburn University, Auburn, AL

Employer: Auburn University

My main responsibility is separated into two sections. The first section is providing 3D printing techniques to support projects from students and faculty on campus as well as performing daily maintenance on FDM and SLA printers. The second section is providing a project solution based on patrons' needs and wants. The solution includes refining the concept, designing a prototype, estimating the prototype, and delivering the final product.

July 2014 – Sep. 2017

### **Assistant Professor at Industrial Design Department**

School of Art and Media, Xi'an Technological University, Shaanxi, China

Employer: Xi'an Technological University

My main responsibility was teaching industrial design courses for undergraduate students. The main courses were Practice of Interactive Design, Layout Design, Modeling Materials and Technology, and Graphic Interface Design.

July 2009 – Sep. 2010

### **Industrial Designer/ CMF Engineer**

Industrial Center, Shenzhen Unistar Communications Co., Ltd. Shenzhen, China

Employer: Shenzhen Unistar Communications Co., Ltd

My main responsibility was pre-product designing which included materials selection, color and finishing design, and appearance design. Also, I was collaborating with other engineers to complete mass-productive process and collecting consumers feedbacks. Designed products had been sold for over 1 million pieces.

July – Sep. 2008

### **Industrial Designer Assistant**

Nanjing Huadian Communications Co., Ltd. Nanjing, China

Employer: Nanjing Huadian Communications Co., Ltd.

My main responsibility was designing commercial products for customers which includes the appearance and structure of a product, market research, and performing the presentation to customers directly.

## Teaching Experience

- July 2014 – June 2017    **Teaching Industrial Design courses for undergraduate**  
School of Art and Media, Xi'an Technological University, Shaanxi, China
- Oct. 2013 – Nov. 2013    **Teaching courses for undergraduate as a TA**  
School of Design, Jiangnan University, Wuxi, China
- Feb. 2013 – June 2013.    **Mentor of graduation for undergraduate**  
School of Design, Jiangnan University, Wuxi, China

## Awards and Fellowships

- Dec. 2012    **2012 UXAWARD China User Experience Design Competition, Finalist**

## Computer Skills

OS usage: Windows, MacOS, Linux  
Focused OS: Linux  
Languages: Java, Python, MATLAB, JavaScript, PHP, SQL, C, Fortran  
Focused Languages: Python, SQL, Java  
Coding Tools: Eclipse; Visual Studio Code; PyCharm; Android Studio;  
3D Modeling Tools: Rhinoceros; Pro-E; SolidWorks; Autodesk Alias;  
2D Tools: CorelDRAW, Photoshop  
Focused Tools: Eclipse, Rhinoceros, Autodesk Alias, CorelDRAW

## Journal Articles(peer-reviewed)

1. Chen, Y. B. (2016). The primary Exploration of Principle and Design Process of Human-Centered Design. Design.  
<https://kns.cnki.net/kcms/detail/detail.aspx?filename=SJTY201622045&dbcode=CJFV>
2. Chen, Y. B., Zhang, L. H (2014). The primary Exploration of Constructive Principle of Service Design based on People- Oriented of Waiting Facilities in Children's Hospital, A Case Study of Wuxi Children's Hospital Infusion Waiting Area. Art and Design.  
[https://www.cnki.net/KCMS/detail/detail.aspx?QueryID=0&CurRec=1&filename=YSSL2014Z1023&dbname=CJFD2014&dbcode=CJFQ&pr=&urlid=&yx=&uid=WEEvREcwSIJHSlIdRa1FhdXNXaEhoOG5LZXdzT24xeE1hc29EbXFWNEV6dz0=\\$9A4hf\\_YAuvQ5obgVAqNKPCYcEjKensW4IQMovwHtwkF4VYPoHbKxJw!!](https://www.cnki.net/KCMS/detail/detail.aspx?QueryID=0&CurRec=1&filename=YSSL2014Z1023&dbname=CJFD2014&dbcode=CJFQ&pr=&urlid=&yx=&uid=WEEvREcwSIJHSlIdRa1FhdXNXaEhoOG5LZXdzT24xeE1hc29EbXFWNEV6dz0=$9A4hf_YAuvQ5obgVAqNKPCYcEjKensW4IQMovwHtwkF4VYPoHbKxJw!!)

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3. Chen, Y. B., Zhang, L. H (2014). The Service Design of Waiting Facilities at Children's Hospital based on the Principle of Human- Centered Design. Design.

[https://kns.cnki.net/kcms/detail/detail.aspx?filename=SJTY201403061&dbcode=CJFV](#)

## **Journal Articles**

1. Chen, Y. B. (2013). The Practices of Fashioned Product Design which based on the Principle of Non- Material Culture. DaZhongWenYi.

[https://www.cnki.net/KCMS/detail/detail.aspx?](#)

[QueryID=0&CurRec=4&filename=DZLU201319053&dbname=CJFD2013&dbcode=CJFQ&pr=&urlid=&yx=&uid=WEEvREcwSIJHSlRa1FhdXNXaEhoOG5LZXdzT24xeE1hc29EbXFWNEV6dz0=\\$9A4hF\\_YAuvQ5obgVAqNKPCYcEjKensW4IQMovwHtwkF4VYPoHbKxJw!!](#)

[&v=MTI2NTZVcjNQSVRmSGU3RzRIOUxOcG85QVo0UjhlWDFMdXhZUzdEaDFUM3FUcldNMUZyQ1VSTE9lWnVadUZpem0=](#)