

Xin Fu

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EDUCATION

- **School of Electronic Information, Wuhan University, China** *Sept. 2015 – July 2019 (expected)*
B.S. in Electronic Information Engineering; GPA: **3.76/4.0**; Rank top **5%**
Relevant Coursework:
 - Advanced Mathematics B2 (96) Linear Algebra B (94) Engineering Stochastic Mathematics (91)
 - Data Structure and Algorithms (95) Digital Image Processing (94) Object-Oriented Programming (93)
- **School of Engineering, University of British Columbia, Canada** *July 2018 – Sept. 2018*
Visiting undergraduate research intern, supervised by Prof. Zheng Liu

PUBLICATION

- **Paper**
 1. **Xin Fu**, Jia Yan, Cien Fan. Image Aesthetics Assessment using Composite Features from Off-the-shelf Deep Models, *2018 IEEE International Conference on Image Processing (ICIP 2018)*.
 2. Jia Yan, Jie Li, **Xin Fu**. No Reference Quality Metric of Contrast Distorted Images using Equalization, submitted to *Journal of Visual Communication and Image Representation, 2018* (Under review).
- **Patents** (7 in total)
 1. **Xin Fu**, Jia Yan, *et al.* Most Beautiful Route Navigation System via Street View Image Aesthetics Score. Patent No. 201710984682.8, Sept. 2017
 2. Yaoxing Wang, **Xin Fu**, Shujing Zhao, *et al.* Digital Signal Generator Based on FPGA. Patent No. 201621319092.0, Dec. 2016

RESEARCH EXPERIENCE

- **Research Assistant** *July 2018 – Present*
ISDPR Lab, University of British Columbia, Canada
Advisor: Prof. Zheng Liu
 - Project: **Using Deep Learning for Industrial Inspection Data Analysis**
Selected and supported by **Chinese Scholarship Council** and **Mitacs program**.
Build modern deep learning models to analyze and classify inspection data from industrial area.
- **Research Assistant** *Mar. 2016 – Present*
Digital Signal Processing Lab, Wuhan University, China
Advisor: Dr. Jia Yan and Prof. Cien Fan
 - Research: **Image Quality/Aesthetics Assessment**
Exploit **convolutional neural network** and **machine learning** methods on image assessment tasks.
Proposed efficient method of exploiting composite deep features and achieved **state-of-the-art** performance.
Using image equalization and structural-similarity index (SSIM) and support vector machine for
No-reference image quality assessment (NR-IQA) problem.
Maintain the source code on GitHub: CEIQ
 - Project: **Ultrasonic-based Virtual Touch Device**
Selected by **National Undergraduate Training Program for Innovation and Entrepreneurship**
Propose and build universal input device with sensors and microcontrollers using signal processing.

AWARDS

- Microsoft Beauty of Programming, **2nd Prize (2/2500, top 0.1%)** *Aug. 2017*
 - Built a chatbot based on natural language processing and machine learning algorithms.
 - Detail: KBQA-based model, image classification, Caffe image aesthetics analysis model, Azure deployment
- National Undergraduate Electronic Design Contest, Hubei Prov., **1st Prize (top 1%)** *Sept. 2016, 2017*
 - Composed algorithms of autonomous quadcopter control system with machine vision.
 - Detail: Cascade PID controller algorithm, real-time object tracking based on image processing, Kalman filter (2016): Electronic weighing system based on sensors and FPGA with signal processing algorithm
- National English Competition for College Students, **3rd Prize (top 5%)** *May. 2017*
- Yu Gang Scholarship (**top 1/380**) *Sept. 2016*
- First-Class Scholarship (**top 4/380**) *Sept. 2017*
- Triple-A Outstanding Student of Wuhan University (**top 1%**) *Oct. 2017*

ACTIVITIES AND PROJECTS

- Deep Learning Specialization on Coursera *Feb. 2018*
 - Certified that successfully completed 5 courses and assignments concerning cutting-edge AI technology.
- Survey and implement new deep learning algorithms *Dec. 2017*
 - MSRA Student Projects, supervised by researcher in MSRA*
 - Implemented DL algorithms and contributed to Microsoft official AI samples open source project.
 - Detail: Implement Tensorflow(Keras) Capsule Network and various GANs with Visual Studio
- HACKxFDU (biggest Hackathon in China), Shanghai *Nov. 2017*
 - Team leader, developed a smart car prototype on NVIDIA Embedded System with deep learning.
 - Detail: SSD object detection algorithm on Caffe, OpenCV tracking, Nvidia Jetson with CUDA, ROS
- Google Android National College Student Mobile Internet Innovation Challenge *Sept. 2017*
 - Team leader, developed a photo-analyzing app based on image aesthetic assessment with deep learning.
 - Detail: Caffe model deployment, Scene Recognition, Android development, RESTful API
- Microsoft Student Summer Camp *Aug. 2017*
 - Proposed idea "Suspect Sketch Generation with GAN" was awarded the best project by the experts in MSRA.

LEADERSHIP

- **President**, Microsoft Student Club, Wuhan University *May. 2017 – Present*
 - Organized campus-wide technical events and competitions, supported by Microsoft Research Asia.
- **Training Advisor**, Electronic Creative Club, Wuhan University *Jun. 2017 – Present*
 - Training freshmen to start electronic design with microcontrollers.

SKILLS

- **Research Related:**
 - AI:** Tensorflow, Keras, Caffe, PyTorch, OpenCV, Scikit-Learn, *etc.*
 - Mathematics:** Calculus, Linear Algebra, Probability and Statistics, *etc.*
- **Programming Related:**
 - Languages:** Python, C/C++, C#, Javascript, MATLAB, LaTeX, Verilog HDL, Assembly, *etc.*
 - Development:** Git, Linux, Shell, Cross-platform App, Web.
 - GitHub:** mtobeyf (total star: **200+**) Open source project maintainer & contributor
- **TOEFL iBT:** 100 (Reading: 28, Listening: 28, Speaking: 22, Writing: 22)