# Junru (Charles) Wu

Apt. 6B, 401 Anderson St. • College Station, TX 77840 • (979) 264-9818 • sandboxmaster@tamu.edu


**Objective** Summer 2018 R&D Internship in the fields of Deep Learning, Computer Vision, and Image Processing.

**Education**

**Texas A&M University**, College Station, TX — *Aug. 2017 - May. 2019*
*Master of Science in Computer Science*
- Core Courses: Machine Learning Methods in Computer Vision, Machine Learning

**Technische Universitaet Darmstadt**, Darmstadt, Germany — *Oct. 2014 - Feb. 2015*
*Exchange Student* — GPA: 80/100

**Tongji University**, Shanghai, China — *Sept. 2012 - July 2016*
*B.Eng. in Electronics and Information Engineering* — GPA: 84/100
- Thesis: Pedestrian Detection with Machine Learning
- Core Courses: Fundamentals of Computers, C/C++ Programming, Digital Signal Processing, Software Technology, Computer Networks, Digital Electronic Technology, Embedded Systems

**Publication**

Yanyu Xu, **Junru Wu**, Nianyi Li, Shenghua Gao and Jingyi Yu, "Beyond Universal Saliency: Personalized Saliency and its Prediction", *submitted to IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**). [submitted at Aug 2017]

Yanyu Xu, Nianyi Li, **Junru Wu**, Jingyi Yu, and Shenghua Gao, "Beyond Universal Saliency: Personalized Saliency Prediction with Multi-task CNN", *In Proceedings of the International Joint Conference on Artificial Intelligence* (**IJCAI**), *2017.* **[Distinguished Student Paper Award Finalist](3/660)** [pdf].

**Work Experience**

**Visual Informatics Group, Texas A&M University**, College Station, TX — *Aug. 2017 - Present*
*Research Assistant* — *Advisor: Prof. Zhangyang (Atlas) Wang*

Project: Deep Learning for Pixelated Image Abstraction
- Investigated an automatic method to abstract high resolution images into very low resolution outputs with reduced color palettes in the style of pixel art.
- Studied and modified state-of-the-art techniques in image clustering, color quantization, and super resolution.
- Publication targeted at SIGGRAPH 2018.

**Visual Computing Lab, ShanghaiTech Univeristy,** Shanghai, China — *Aug. 2016 - Aug. 2017*
*Research Assistant* — *Advisor: Prof. Shenghua Gao*

Project: Personalized Saliency Prediction with Multi-task CNN — *Aug. 2016 - Aug. 2017*
- Investigated heterogeneous gaze patterns using data collected from individuals with an eye-tracker.
- Modeled personalized saliency maps across users using a Multi-task Convolutional Neural Network.

Project: Spatiotemporal Saliency in Virtual Reality — *May. 2017 - Aug. 2017*
- Built an eye-tracking system in HTC VIVE with aGlass and Unity, and collected a video saliency dataset.
- Addressed the problem of spatiotemporal saliency detection in VR and proposed a R-CNN based model

**Delphi Technical Research & Development Center Co.,Ltd.**, Shanghai, China — *July 2015 - Sept. 2015*
*System Engineering Intern* — *Supervisor: Zhigang Yao, Engineering Group Manager*
- Used Altium Designer software to design PCB Layout for the Intergrated test bench of Body Control Module.

**Course Project Experience**

Pedestrian Detection with Machine Learning, Tongji University — *Jan 2016 - July 2016*
- Built a pedestrian detector with Pyramid HOG features and Intersection Kernel Support Vector Machine.
- Performed comperhensive experiments on INRIA Pedestrian Dataset and compare model performance against state-of-the-art baselines.

Crowd tracking in Aerial Video, Tongji University — *June 2015 - June 2016*
- Implemented a automate surveillance system to detect and track pedestrians in aerial video by UAVs.
- Adopted background subtraction based on Gaussian mixture models to detect moving pedestrians and used Kalman filter to track them.

**Skills** Caffe, Tensorflow, PyTorch, OpenCV, Python, MATLAB, Linux Shell, C++, C#, LaTeX, Unity

**Awards**
- Distinguished Student Paper Award Finalist of IJCAI 2017 — *Aug. 2017*
- Mathematical Contest in Modeling (MCM), Honorable Mention — *Feb. 2016*