

# ZIDA LIU

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## EDUCATION

### Duke University, Durham, NC, USA

Aug.2018 - Present

*M.Sc., Electrical and Computer Engineering*

Concentration: mobile sensing, edge computing, applied machine learning and augmented reality

**Overall: GPA: 3.80/4.00**

### Huazhong University of Science and Technology, China

B.E., Electronic Information and Communications

Sep.2014 - Jun.2018

- Bachelor of Engineering in Telecommunications Engineering

**Overall: GPA: 3.56/4.00**

## RESEARCH & TEACHING EXPERIENCE

### Intelligent Interactive Internet of Things Lab, Duke University, Durham

May.2019 - Present

#### *Research Assistant*

- Advised by Prof. Maria Gorlatova.
- Participating in the design of auxiliary-assisted ensemble learning framework for dynamic metasurface antenna-based radio-frequency sensing.
- Designing a collaborative AR system to improve the users' experience under heterogeneous AR scenarios.

### ECE 586 - Vector Space Methods with Applications, Duke University, Durham

Aug.2019 - Present

#### *Teaching Assistant*

- Helping students to establish basic notions of topology in the context of metric spaces.
- Holding TA office hours to teach students applying vector space methods to signal processing, machine learning, optimization, least-squares filtering, and minimum mean-square error estimation. This helps students to gain proficiency in using high-level scientific programming languages such as Python and Matlab.
- Assisting the Professor to grade students' homework, projects, and exams.

### National Anti-Counterfeit Engineering Research Center, Wuhan, China

Jan.2017 - Apr.2018

#### *Data Science and Computer Vision Laboratory*

- Participating in research on top-down saliency detection: Designing and implementation of a single SCSPM backtracking model in Matlab; Conducting a performance comparison and result analysis.
- Refining a semantic segmentation algorithm with Deep Learning: Introducing a series of different hole convolutional layers to reduce noise and make feature images denser; Using deconvolution layers instead of the bilinear interpolation to convert the feature map; Adopting a fully connected conditional random field to refine edges of partitioned image contents.

## PUBLICATIONS

- [1] **Zida Liu**, Guohao Lan, Jovan Stojkovic, Yunfan Zhang, Carlee Joe-Wong, and Maria Gorlatova, "Title withheld for concurrent double-blind review," in Proc. ACM/IEEE Conference on Information Processing in Sensor Networks (ACM/IEEE IPSN'20) (**~21% acceptance rate**).
- [2] Jovan Stojkovic, **Zida Liu**, Guohao Lan, Carlee Joe-Wong, and Maria Gorlatova, "Demo: Edge Assisted Collaborative Image Recognition for Augmented Reality," to appear in ACM Conference on Embedded Networked Sensor Systems (ACM SenSys'19) [[Abstract](#)][[Video](#)].
- [3] Guohao Lan, Mohammadreza F. Imani, **Zida Liu**, Wenjun Hu, Andrew Lan, David R. Smith, and Maria Gorlatova, "Title withheld for concurrent double-blind review", submitted to ACM Conference on The International Conference on Mobile Systems, Applications, and Services (ACM MobiSys'20).

## PROJECT EXPERIENCE

### Matching human faces in documents with human faces by VGG Face Deep Learning

Apr.2017 - Jun.2017

- Using VGG deep learning framework to realize a robust face-matching module.
- Using Caffe to modify network dimensions on the last but one layer to match the target faces; Regulating weights by L2-norm of feature vectors to prevent overfitting.
- Writing a script file finding the appropriate deciding threshold.

- Designing user-friendly Graphical User Interface with Tkinter to integrate the whole module within the project.
- Multi-threads FTP Uploads and Downloads Software Design** *Sep.2016 - Dec.2016*
- Undertaking tasks to create an FTP client with GUI by software programming.
  - Using C++, MFC programming to obtain file addresses when double clicking and embedded the address into Upload and Download function for file transmission.
  - Enhancing reusability by extracting diverse code style rules and provided a multi-threads method; Achieving d several files transmission simultaneously by providing a multi-threads API for developers to easily integrate their own download and upload methods into the whole system.

## **INTERNSHIP**

- Cisco** *Sep.2017 - Nov.2017*
- Designing a lightweight intelligent troubleshooting expert system with Python.
  - Providing a diagnostic model framework and interface for users to create their raw standard models.
  - Creating a simple GUI as the reporting module to exhibit systems performances.
  - Improving the diagnostic models by training a K-nearest classifier from real-world data.

## **UNIVERSITY LEADERSHIP & ACTIVITIES**

- President-P.E Department of Student Union, HUST** *Sep.2014 - Sep.2015*
- Student International Communication Association** *Apr.2015 - Aug.2015*
- Members of HUST Music Club** *Sep.2015 - Aug.2015*
- Online Learning:** Coursera.org: Machine Learning, Deep Learning *Oct.2016 - Nov.2017*

## **HONORS& AWARDS**

- Teaching Assistantship at Duke University *Aug.2019 - Present*
- Research Assistantship at Duke University *May.2019 - Present*
- The Innovation and Entrepreneurship Competition of College Students of Hubei *Apr.2016 - Apr.2017*
- 2<sup>nd</sup> Prize, the Front-end Web Design Contest, HUST *Nov.2015*
- Excellent Student Cadres *Sep.2014 - Sep.2015*

## **SKILLS**

- Platforms: Mac OS, Windows, Linux
- Languages: C/C++, Python, Matlab, Java,, CSS, Html, JavaScript, Latex
- Softwares: Xcode, Spider, CodeBlocks, Sublime Text, Git, Visual Studio, Office, Keynote, etc