Ziyue "Alan" Xiang
Research Assistant

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Education

- **Ph.D. in Electrical and Computer Engineering**   Aug. 2020–Present

  Purdue University, West Lafayette, Indiana, USA

- **Msc. in Computer Science**   Aug. 2018–May 2020

  Syracuse University, Syracuse, New York, USA

- **Berkeley International Study Program**   Aug. 2016–Dec. 2016

  University of California, Berkeley California, USA

- **Bsc. in Information and Computing Science**   Sept. 2014–June 2018

  Sun Yat-sen University, Guangdong, China

  – Best undergraduate thesis award

Experience

- **Research Assistant**   Aug. 2020–Present

  Video and Image Processing Laboratory (VIPER), ECE, Purdue University
  https://engineering.purdue.edu/~ips/

  – Conducting research under the SemaFor program
    https://engineering.purdue.edu/SEMAFOR/

  – Investigating reliable and cost-effective approach to counter deepfake and other types of media manipulation techniques that bring substantial threat to the credibility of information

- **Teaching Assistant**   Jan. 2020–May 2020

  EECS, Syracuse University

  – Teaching assisant of *CIS-375: Discrete Mathematics* lectured by Prof. Andrew C. Lee

  – Responsible for grading, hosting office hours, and preparing recitation materials

  – Researched and practiced the transition to online learning during the COVID-19 pandemic

- **Research Assistant**   Aug. 2018–July 2020

  SOS+CD Lab, iSchool, Syracuse University
  https://scienceofscience.org/

  – Developed techniques to detection figure manipuluation in scientific publications

  – Assisted in a successful grant application from US Office of Research Integrity

  – Participated in the organization of the first Computational Research Integrity Conference
    https://cri-conf.org/

Publication

——— 2021 ———

Ziyue Xiang, János Horváth, Sriram Baireddy, Paolo Bestagini, Stefano Tubaro, and Edward J. Delp (June 2021). "Forensic Analysis of Video Files Using Metadata". In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*

——— 2020 ———

Ziyue Xiang and Daniel E. Acuna (2020). "Scientific Image Tampering Detection Based On Noise Inconsistencies: A Method And Datasets". In: *arXiv preprint arXiv:2001.07799*. URL: https://arxiv.org/abs/2001.07799

Daniel E. Acuna and **Ziyue Xiang** (2020). "Estimating a Null Model of Scientific Image Reuse to Support Research Integrity Investigations". In: *arXiv preprint arXiv:2003.00878*. URL: https://arxiv.org/abs/2003.00878

Projects

- **LATEX 3 Tutorial**
  https://www.alanshawn.com/latex3-tutorial/

  One of the first practical tutorials for the LATEX 3 programming language

- **The PyCG Series**
  https://www.alanshawn.com/pyopengl_series/

  A series of experiments with computer graphics algorithms in Python with the help of PyOpenGL and other tools

- **The *luaprogtable* package**
  https://www.ctan.org/pkg/luaprogtable

  A LuaTEXpackage that provides programmable table interface

- **Better performance evaluation for image manipulation detection**
  https://www.alanshawn.com/tech/2020/02/20/mf-perf-eval.html

  Uncovering the problems of existing performance evaluation methods for image manipulation detection, calling for better techniques

- **VPN mechanism demonstration**
  https://www.alanshawn.com/vpn-demo/

- **WPANTAP: a TAP interface for Linux-wpan**
  https://github.com/xziyue/wpantap

- **Properties of robust features from MNIST**
  https://github.com/xziyue/robust_mnist_feature_py

  Extracting and studying the properties of robust features from the MNIST dataset, inspired by Andrew Ilyas, Shibani Santurkar, Dimitris Tsipras, Logan Engstrom, Brandon Tran, and Aleksander Madry (2019). "Adversarial examples are not bugs, they are features". In: *arXiv preprint arXiv:1905.02175*

Skills

Python   C++   Cython   Lua   HTML/CSS/JavaScript   LATEX   Haskell   Julia

Data Mining   Data Visualization   Machine Learning   Computer Vision   Linux Security   Cybersecurity

tensorflow   Apache Spark