Junyi Cao

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Education

- **Shanghai Jiao Tong University** — Shanghai, China
  Master Major in Computer Science and Technology; GPA: 3.85/4 (Rank 9/82) — *Sep 2021 - Mar 2024 (prospective)*
  Courses achieved an A^+ grade: Neural Network Theory and Application, Optimization Method, Image Processing and Machine Vision
- **University of California, Berkeley** — Berkeley, CA, USA
  Short-term Visiting Program; GPA: 3.81/4 — *Aug 2019 - Dec 2019*
  Courses: CS 189 (A grade), CS 61b (A^+ grade)
- **South China University of Technology** — Guangzhou, China
  Bachelor Major in Software Engineering and Minor in Finance; GPA: 3.87/4 (Rank 6/273) — *Sep 2017 - June 2021*

Publications (* Stands for equal contribution)

- **End-to-End Reconstruction-Classification Learning for Face Forgery Detection**
  Junyi Cao, Chao Ma, Taiping Yao, Shen Chen, Shouhong Ding, Xiaokang Yang. In *CVPR*, 2022.
- **Structure Destruction and Content Combination for Generalizable Anti-Spoofing**
  Chengyang Hu, Junyi Cao, Ke-Yue Zhang, Taiping Yao, Shouhong Ding, Lizhuang Ma. *IEEE TBIOM*, 2022.
- **Co-attention Network with Label Embedding for Text Classification**
  Minqian Liu*, Lizhao Liu*, Junyi Cao, Qing Du. *Neurocomputing*, 2022.
- **Dynamic Extension Nets for Few-shot Semantic Segmentation**
  Lizhao Liu*, Junyi Cao*, Minqian Liu*, Yong Guo*, Qi Chen*, Mingkui Tan. In *ACM Multimedia*, 2020.

Skills Summary

- **Languages**: Python, Java, R, C++
- **Tools**: PyTorch, Tensorflow
- **English Proficiency**: CET 4: 626, CET 6: 571, TOEFL: 109

Experience

- **TuSimple** — Beijing, China
  Research Intern (supervised by Zhichao Li) — *Dec 2022 - Current*
  - **3D Scene Reconstruction in Large-scale Autonomous Driving Simulations**: Researching on efficient techniques for reconstructing 3D scenes for autonomous trucking scenarios.
- **Youtu Lab, Tencent** — Shanghai, China
  Research Intern (supervised by Taiping Yao) — *Jan 2021 - Dec 2022*
  - **Face Anti-Spoofing Research**: (1) Designed and developed a face anti-spoofing algorithm using the structure destruction and content combination technique which boosts the generalization performance for a wide range of anti-spoofing tasks. It has been accepted for publication in IEEE Transactions on Biometrics, Behavior, and Identity Science in 2022. (2) Researched and designed a generalizable face anti-spoofing algorithm based on an asymmetrical supervised autoencoder which emphasizes the compact and robust features of live faces. Meanwhile, proposed a novel style synthesis module for generating novel style features to simulate the domain shifts during training. It has been submitted for peer review.
  - **Face Forgery Detection Research**: (1) Partitioned in the first Artificial Intelligence Security Competition (AISC 2022) held by Beijing Municipal Bureau of Economy and Information Technology and achieved 1st place on "Deepfake security competition" track. (2) Researched and designed an end-to-end reconstruction-classification learning framework for face forgery detection. It focuses on the common compact representations of genuine faces and adopts metric-learning to encourage a discriminative feature space. It has been accepted for presentation in CVPR 2022.
- **Cainiao Network** — Hangzhou, China
  Development Intern — *July 2020 - Sep 2020*
  - **Back-end Development**: (1) Responsible for the development of daily financial needs of the capital service team during the internship, and completed the online configuration management platform for financial statements.

Honors and Awards

- HyperGryph Scholarship (Top 5%). 2022.
- National Scholarship (Top 1%). 2019.
- Merit Student Award. 2018–2020.
- First-class Scholarship in South China University of Technology (Top 5%). 2018.