ZIYAO ZENG

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Homepage: https://adonis-galaxy.github.io/homepage

SUMMARY

Junior of ShanghaiTech University majoring in Computer Science

Starting AI-Scientist with Enterprise

Research Interests include Computer Vision, Bioinformatics, Machine Learning

EDUCATION

ShanghaiTech University   **Sept. 2019 - (Expected) June 2023**

B.Eng. in Computer Science, Major

- **Top GPA last year** (2020-2021 academic year, **3.85/4.00** , **rank 6/166**)
- **Selected Courses:** (*: graduate-level) Deep Learning* (A), Digital Image Processing* (A), Probability & Statistics (A), Python Programming (A), Computer Architecture (A), C & C++ Programming (Top Student), Computer Vision I (A)

Innovation and Entrepreneurship, Minor

- **Selected Courses:** Negotiation (A), Strategy Management (A), Intro. to Entrepreneurship (Opportunity: A, Marketing: A, Finance: A), Intro. to Economics (A)
- **Entrepreneurial Mindshift Program**   **Babson College | March 2021**

Fuzhou NO.1 High School   **Sept. 2016 - June 2019**

PUBLICATIONS

(*: equal contribution, †: corresponding author)

- **DSPoint: Dual-scale Point Cloud Recognition with High-frequency Fusion**
  Renrui Zhang*, **Ziyao Zeng***, Ziyu Guo*, Xinben Gao, Kexue Fu, Jianbo Shi†
  arXiv technical report, 2021, Link: https://arxiv.org/pdf/2111.10332.pdf

- **VT-CLIP: Enhancing Vision-Language Models with Visual-guided Texts**
  Renrui Zhang*, Longtian Qiu*, Wei Zhang, **Ziyao Zeng**
  arXiv technical report, 2021, Link: https://arxiv.org/pdf/2112.02399.pdf

- **Twitter Emotion Classification**
  Yiteng Xu*, **Ziyao Zeng***, Jirui Shi*, Shaoxun Wu*, Peiyan Gu*
  Final Project of CS181 Artificial Intelligence, 2021 Fall, ShanghaiTech University
  Link: https://adonis-galaxy.github.io/homepage/research/AI_CS181_project/AI_CS181_project.pdf

- **Generalized DUQ: Generalized Deterministic Uncertainty Quantification**
  Zhitong Gao*, **Ziyao Zeng***
  Final Project of CS282 Machine Learning, 2021 Spring, ShanghaiTech University
  Link: https://adonis-galaxy.github.io/homepage/research/ML_CS282_project.pdf

- **Seek Common while Shelving Differences: A New Way for dealing with Noisy Labels**
  Zhitong Gao*, **Ziyao Zeng***
  Final Project of CS280 Deep Learning, 2020 Fall, ShanghaiTech University
  Link: https://adonis-galaxy.github.io/homepage/research/DL_CS280_project.pdf

RESEARCH EXPERIENCES

GRASP Lab   **University of Pennsylvania**

Research Assistant | Supervisor: Prof. Jianbo Shi   April 2021 - Present

- **Self-supervised Image Segmentation** | With the help of reconstruction-based model that simulates human learning skill | Collaborator: Renrui Zhang, Qinman Wu
- **Zero-shot/Prototype-based Depth Estimation** | Using vision-language model/feature-prototypes to conduct zero/few-shot depth estimation | Collaborator: Renrui Zhang
- **Monocular 3D Object Detection** | Regress 3D bounding box for object using only monocular RGB image | Collaborator: Xinbeng Gao, Renrui Zhang
- **Point Cloud Recognition** | Process point cloud to efficient extract feature, and deal with recognition tasks like shape classification, part segmentation, scene segmentation, 3D object detection | Collaborator: Renrui Zhang, Ziyu Guo, Xinben Gao, Kexue Fu

PLUS Lab   ShanghaiTech University
Research Assistant | Supervisor: Prof. Xuming He   July 2020 – June 2021
- **Mix-data Anomaly Segmentation** | Develop a cascaded auto-encoder with metric learning to perform mix-data anomaly segmentation | Collaborator: Bing Jiang
- **Noisy Labels Classification** | Design a model using Trinet and early stopping trying to seek common while shelving difference to deal with noisy data classification | Collaborator: Zhitong Gao
- **Uncertainty Estimation** | Focus on uncertainty estimation especially distinguish between epistemic and aleatoric uncertainty using a single model | Collaborator: Zhitong Gao

Virtual Reality and Visual Computing Center   ShanghaiTech University
Research Assistant | Supervisor: Prof. Jingyi Yu   Jan. 2021 - March 2021
- **6D Pose Estimation using NeRF** | Modifying NeRF with light disentanglement and rotation matrix optimization to estimate object's 6D pose | Collaborator: Ge Zhang & Peihao Wang
- **Adversarial Training in NeRF** | Adapt NeRF to training under highly noisy scenario by applying method of learning with noisy label | Collaborator: Ge Zhang & Peihao Wang

State Key Laboratory of Drug Research   Shanghai Institute of Materia Medica, CAS
Research Assistant | Supervisor: Prof. Minyue Zheng & Prof. Hualiang Jiang   Jan. 2021 – May 2021
- **miRNA Target Matching** | Design a deep learning model to match miRNA drug with its target | Collaborator: Xiaolong Wu

Laboratory of Bioinformatics and Functional Genomics   ShanghaiTech University
Research Assistant | Supervisor: Prof. Liye Zhang   Jan. 2021 – March 2021
- **Enhancer Prediction** | Design a deep learning model to predict enhancer using genetic information | Collaborator: Chenyue Guo

Laboratory of Cancer Biology   ShanghaiTech University
Research Assistant | Supervisor: Prof. Xuesong Liu   Nov. 2020 - Jan. 2021
- **HRD Prediction** | Develop a deep learning model to predict HRD symptom based on information of genetic copy number signature | Collaborators: Huiming Li

Foot Research Laboratory   Fujian Normal University
Research Assistant | Supervisor: Prof. Yifang Fan   July 2017 - Sept. 2017
- **Adolescent Obesity's Effect to arches of foot** | Conduct a research capturing pressure of feet to study effects of adolescent obesity to arches of foot

WORKING EXPERIENCES

UISEE AI Lab   Shanghai, China
Visiting Scholar   July 2021 – April 2022
- Develop point cloud recognition & monocular 3D object detection algorithm for self-driving cars

Shanghai Advanced Research Institute, CAS   Shanghai, China

Intern Lecturer   Aug. 2020 - June 2021

- Teaching advanced scientific topic to public, including deep learning and computer vision

SERVICES

Reviewer: CVPR 2022 (Emergency reviewer, participating in reviewing two papers)

TUTORING EXPERIENCE

Freshman Mentor | Instructed by Prof. Rui Fan   2020 Fall – 2021 Spring

ACHIEVEMENTS

Excellent Student of ShanghaiTech University (top 15%)   2021

State Grid AI Innovation Competition in Power Dispatch and Control   2021

·   Top 10% (24/242)

SKILLS

Python, C/C++, PyTorch, Unity/C#

Bilingual (Chinese/English: CET6-607, GRE-327+4, TOEFL-103)

VOLUNTARY

Greenpeace   2020 - Present

WWF-China   2020 – Present

ShanghaiTech Campus Opening Day   2021

ShanghaiTech New Students' Welcoming Activity   2020

International Symposium of Attitude Research, Innovation, and Management（ISARIM 2019）   2019