Peng(Richard) Xia

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Education

Monash University — Melbourne, Australia
Ph.D. in Electrical and Computer Systems — *Jul. 2023 - Expected Oct. 2026*

- **Advisor**: A/Prof. Zongyuan Ge

Soochow University — Suzhou, China
B.Eng. in Computer Science and Technology — *Sept. 2019 - Jun. 2023*

- **Overall GPA**: 3.7/4.0 **Overall Mark**: 88.17/100
- Admitted to **Artificial Intelligence (AI) Experimental Class**

Research Interests

Primarily lies in the areas of Computer Vision, Deep Learning, Natural Language Processing and Medical Image Analysis. Recent projects focus on the intersection of Multi-Modal Learning (Vision & Language).

Selected Publications

Note: * indicates equal contribution; † indicates corresponding authorship.

- LMPT: Prompt Tuning with Class-Specific Embedding Loss for Long-Tailed Multi-Label Visual Recognition.
  P. Xia, D. Xu, L. Ju†, M. Hu, J. Chen and Z. Ge.
  Under Review.
- Detection of Cognitive Dysfunction in Patients with Atrial Fibrillation: A Deep Learning Model Based on Fundus Images.
  Z. Wang*, C. Jiang*, **P. Xia***, J. Ma, Y. Bai, Y. Lai, X. Peng, S. Li, T. Ma, L. Ju, L. He, X. Guo, S. Li, W. Wang, C. Jiang, N. Liu, R. Tang, D. Long, Y. Chen, C. Sang†, X. Du, Z. Ge and C. Ma†.
  In Submission.
- Chinese Grammatical Error Correction Based on Knowledge Distillation.
  P. Xia, Y. Zhou, Z. Zhang, Z. Tang and J. Li†.
  arXiv preprint 2022. [Paper] [Code]

Experience

Monash Medical AI Group (MMAI), Monash University — Jan. 2023 – Present
Research Assistant (Advisor: A/Prof. Zongyuan Ge) — *Suzhou, China*

- Research Topic: Vision-Language Model

Airdoc Technology Inc — Jul. 2022 – Jan. 2023
Research Intern (Advisor: Ph.D. candidate Lie Ju and A/Prof. Zongyuan Ge) — *Shanghai, China*

- Research Topic: Detection of diseases from fundus images based on deep learning

Duke-NUS Medical School, National University of Singapore — Jun. 2022 – Jul. 2022
The University Alliance of the Silk Road Summer Courses (Frontier in Medicine) — *Singapore*

- Main Coursework: Drug discovery for Ocular Angiogenic Diseases (Grade: 90%)

Institute of Artificial Intelligence, Soochow University — Dec. 2021 – Apr. 2022
Research Intern (Advisor: Prof. Min Zhang and Dr. Juntao Li) — *Suzhou, China*

- Research Topic: Chinese Grammatical Error Correction

Natural Language Processing Research Centre, Soochow University — Oct. 2021 – Nov. 2021
Research Intern (Advisor: Dr. Junhui Li) — *Suzhou, China*

- Research Topic: Neural Chat Translation

Awards & Honors

- **1st Place** (Phase 1) & **3rd Place** (Phase 2). Shanghai-HK Interdisciplinary Shared Tasks Task 1: Trigger Identification. **HK$2000**. *2022*
- **3rd Prize**. The 13th Lanqiao Cup Algorithm Competition. *2022*
- **2nd Prize**. The 3rd Huawei DIGIX AI Algorithm Contest. *2021*
- **Winning Prize**. The 8th Newland Cup Computer Design Contest. *2021*
- **Honorable Mention**. Mathematical Contest In Modeling. *2021*
- **2nd Price**. The 6th LSCAT Cup Translation Competition. *2020*

Patents

- A fundus image prediction method for mental elasticity based on deep learning.
  P. Xia, L. Ju, M. Hu, T. Ma, B. Wang, K. Song, Z. Ge and D. Zhang.
  CN Patent. Under review.
- A fundus image prediction method for anxiety and depression based on deep learning.
  P. Xia, L. Ju, M. Hu, T. Ma, B. Wang, K. Song, Z. Ge and D. Zhang.
  CN Patent. Under review.
- A multi-modal method for predicting cognitive impairment based on deep learning.
  P. Xia, L. Ju, M. Hu, T. Ma, B. Wang, Z. Ge and D. Zhang.
  CN Patent. Under review.
- A multi-modal method for predicting cognitive impairment based on deep learning.
  J. Li, **P. Xia**, K. Zeng, et al.
  CN Software Copyright. 2022SR0228307.
- Lane detection system based on cascaded convolutional neural network.
  J. Li, **P. Xia**, K. Zeng.
  CN Software Copyright. 2022SR0248890.

Skills

Programming Skills: Python, JavaScript, Java, HTML/CSS, SQL, LaTeX, Git, Shell, Vim
Frameworks & Libraries: PyTorch, TensorFlow, Kerass, OpenCV, PIL, NumPy, Matplotlib, Pandas, Scikit-learn, HuggingFace, FairSeq
Language Skills: English(fluent; IELTS 6.5, PTE 60, CET-6 539), Mandarin(native)