# Peng(Richard) Xia

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## Education

**Soochow University** Suzhou, China
*Bachelor of Science in Computer Science and Engineering* *Sept. 2019 - Expected Jun. 2023*

- **GPA**: 3.7/4.0 **Average Score**: 88.13/100
- **Coursework**: Deep learning, Neural Network, Machine Learning, Computer Vision, Algorithms
- **Advisors**: Prof. Min Zhang, Dr. Juntao Li, Dr. Junhui Li

**National University of Singapore** Singapore
*The University Alliance of the Silk Road Summer Course – Frontier in Medicine* *Jun. 2022 - Jul. 2022*

- **Grade**: 90%
- **Coursework**: Drug discovery for Ocular Angiogenic Diseases, Animal Models of CardioVascular Disease

## Research Experience

**Chinese Grammatical Error Correction** | *Institute of AI, Soochow University* Dec. 2021 – Apr. 2022

- Obtained training sets of large scale and fine grit by data augmentation
- Compressed a Seq2Seq model and improved its robustness by knowledge distillation
- Submitted a preprint to arXiv 2208.00351. [arXiv] [Code]

**Neural Chat Translation** | *NLP Research Centre, Soochow University* Sept. 2021 – Feb. 2022

- Trained on WMT20 and fine-tuned on chat translation corpus (BConTrasT and BMELD).
- Modeled the properties, such as role preference, dialogue coherence, and translation consistency

**Lane Detection and Vehicle Departure Warning System** | *Course AIEX2009 Project* Oct. 2021 – Dec. 2021

- Used the cascaded convolutional neural network to detect lane lines
- Designed a warning module for the system in case the car deviates from the lane

**Fatigue Driven Detection Based on CNN** | *Course AIEX2010 Project* Sept. 2021 – Dec. 2021

- Used multi-task cascaded convolutional neural network for face detection and feature point location
- Used convolutional neural network to detect the state of the eyes and mouth from ROI images

## Competition Achievements

**Shanghai-HK Interdisciplinary Shared Tasks "Trigger Identification"** Apr. 2022 - Jun. 2022
*1st place(phase 1) & 3rd place(phase 2)* *Hong Kong & Shanghai, China*

- Used the BigBird model for the message representation and mean pooling
- Added extra linear layers and used R-Drop which is a simple and efficient regularization technique

**The 3rd Huawei DIGIX AI Algorithm Contest** Aug. 2021 - Sept. 2021
*Second Prize* *Nanjing, China*

- Designed an article quality discrimination algorithm to predict and discriminate the categories of articles
- Based on BERT model and PU Learning.

**Computer Design Contest** Jan. 2021 – Mar. 2021
*Winning Prize* *Zhenjiang, China*

- Used BERT model to encode vehicle track data to predict lane trajector
- Designed and displayed the effect of the web page, using HTML, CSS, JavaScript

**Mathematical Contest In Modeling** Feb. 2021
*Honorable Mention* *Bedford, USA*

- Established models to explore the effects of fungi's various characteristics, environments and diversity
- Used algorithms to fit and process data about fungi; analyzed the relevant variables and came to a conclusion

## Work Experience

**Airdoc Technology Inc** Jul. 2022 – Present
*Algorithm Intern* *Shanghai, China*

- Trained a multi-modal model for predicting cognitive impairment by fundus images and clinical data
- Implemented a multi-label classification of pathological myopia by 200k+ fundus images

**China Construction Bank** Jul. 2021 – Aug. 2021
*Intern* *Yancheng, China*

- Participated in lobby service, customer marketing, product promotion, merchant development

## Patents

**A multi-modal method for predicting cognitive impairment based on deep learning** Sep. 2022
*Department of Algorithm, Airdoc Technology Inc* *Shanghai, China*

- **Peng Xia**, Lie Ju,..., Zongyuan Ge & Dalei Zhang.
- CN Invention Patent. Under review.

**Article quality discrimination software based on multi-model transfer pre-training** Feb. 2022
*NLP Research Centre, Soochow University* *Suzhou, China*

- Junhui Li, **Peng Xia**, Kaide Zeng, et al.
- CN Software Copyright. 2022SR0228307.

**Lane detection system based on cascaded convolutional neural network.** Feb. 2022
*NLP Research Centre, Soochow University* *Suzhou, China*

- Junhui Li, **Peng Xia**, Kaide Zeng.
- CN Software Copyright. 2022SR0248890.

## Extra-curricular Activities

**Science and Technology Association, Soochow University** Oct. 2020 – Jul. 2021
*Vice President* *Suzhou, China*

- Organized several large-scale activities, such as English drama competition for freshmen
- During my tenure, the organization won the award of excellent branch association of the university

**Youth League Committee, Soochow University** Sept. 2020 – Oct. 2020
*Volunteer for the 120th anniversary of Soochow University* *Suzhou, China*

- Prepared supplies for the school's anniversary event
- Received guests; took event reports

## 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
**Language Skills**: English(IELTS 6.5, CET-6 539), Mandarin(native)