Xiao Chuang

Email : xiaochuang@mail.ustc.edu.cn
Mobile : +86-17375030169

Education

- **University of Science and Technology of China** — Hefei, China
  junior student in Earth and Space science; GPA: 3.67 — *Sep 2019 - Present*

  Zhao Jiuzhang Talent Program in Earth and Space Sciences, School of Earth and Space Sciences

- **Cources**:
  Calculus - Single Variable(92), Calculus - Several Variables(91), Linear Algebra(90), Probability and Statistics(92)
  Computer Programming(96), AI in geoscience(86), Computational Methods(95)
  Mechanics(90), Electromagnetism A(90), Thermal Physics(91)

Skills Summary

- **Languages**: Python, C/C++
- **Frameworks**: PyTorch, TensorFlow
- **Tools**: Sac,Matlab(basic),LaTeX
- **Platforms**: Linux, Web, Windows

Research Experience

- **S-P converted phase picking**
  Advisor Teacher:Xiaowei chen — *June 2022 - Present*

  - **Aim**: Getting a new DAS deep learning model for forge to automate the progress of picking the arrival time of S-P converted wave.
  - **Progress**: We selected the data of 366 earthquake events with magnitude between -1 and -2 that happened in Ohio during Sept 2021. In all these event, I have manually picked S-P waves of 89 events. Now,I am calculating the SNR and Spectrum of each channel of every events to check the picks and see if those arrivals can differentiate their depth and location. The next step is to design a new deep learning model to make the picking progress automaticall.

- **Detection of aftershocks using AI**
  Advisor Teacher:Zefeng Li — *June 2021 - Present*

  - **Aim**: Combining artificial intelligence and new methods of signal processing to improve the aftershock detection capability within 1 hour after an earthquake.
  - **Method**: Training a net to separate superimposed seismic waveforms from the same area one year after the Ridgecrest earthquake, based on PhaseNet. Useing this net to recognize small aftershock waveforms after earthquakes

- **Rock Image-Classification**
  Advisor Teacher:Xinming Wu — *Sep 2021 - Jan 2022*

  - **Project Course - AI in geoscience**: In this course, students learn the basic concepts of artificial intelligence (AI) and its applications in Geosciences.Based on the studying of the course students finally design convolutional neural network (CNN) to achieve the task of rock image identification (igneous rocks,sediment rocks,metamorphic rocks).
  - **Assignment**: Based on the characteristics of the rocks, I crop the images to a certain size before training. The network uses the efficientnet model and is implemented on the pytorch platform. To improve the accuracy I also choose the adaptive learning rate. However, the results of the training are not quite satisfactory with just 70% accuracy.

Interests

- DAS
- dense array observations of small earthquakes
- Machine learning/Deep learning

Honors and Awards

- PanDeng Prize for Outstanding Student Scholarship in USTC(top 3%) - September, 2020
- Gold Prize for Outstanding Student Scholarshio in USTC(top 5%)- September, 2021

Language

- Japanese Language Proficiency Test level N2(92 scores)
- CET-6(540 scores)
- TOEFLreading 28 listening 25 speaking 20 writing 24