Yuchen Jin

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About Me

A Ph.D student in University of Houston (UH). My main research direction is machine learning in oil and gas problems.

Research Interests

- Machine learning.
- Seismic Processing.
- Signal, Image and Video Processing.
- Inverse Problem.
- Optimization.

Appointment

Research Assistant
Center for Subsurface Modeling and Characterizations (CSMC),
University of Houston, Houston, TX.
Advisor: *Jiefu Chen* and *Xuqing Wu*.

Education

Since 2017	Studying for Ph.D degree in *University of Houston*.
2013–2017	*Huazhong University of Science and Technology (HUST)*, China **Academic records / Credits**:

Freshman	**Sophomore**	**Junior**	**Senior**
89.56/57.5	89.22/54.5	86.92/46.0	88.11/9.0

Average: 88.60/157.0

Awards

2014	*National Scholarship*: Awarded to the top student in a school year. Supported by the Chinese government.
2014	*Merit Student Award, HUST*: Awarded to the top student in a school year. Supported by the university.
2015	*Model Student of Academic Records, HUST*: Awarded to the student whose academic performance is in the range of top 10% in a school year.

Software and Hardware Development Skills

Software Programming:

- **Python**: Tensorflow, numpy, python-c-api, PyQt5 and opencv3.
- **Matlab**: Several tool boxes (like image processing toolbox and wavelet toolbox) and matlab-c-api.
- **C/C++**: Qt5 and ffmpeg4.
- **HTML**: Hugo/Hexo, Plotly.
- **Ruby/RGSS2**: Knowing a little.

Hardware Programming:

- Verilog
- IP core design
- Soft-core based on C

Tex:

- LaTeX
- Beamer

Researches

[1] Xunsheng Du, **Yuchen Jin**, Xuqing Wu, Yu Liu, Xianping Wu, Omar Awan, Nicolas Tognini, Jiefu Chen, and Zhu Han, "The embedded VGG-Net video stream processing framework for real-time quantification of shaker cutting volume," *International Petroleum Technology Conference*, Beijing, China, Mar. 2019.

[2] Xunsheng Du, **Yuchen Jin**, Xuqing Wu, Yu Liu, Xianping Wu, Omar Awan, Nicolas Tognini, Jiefu Chen, and Zhu Han, "Deep learning model for quantifying

shaker cutting volumes in real-time via video streaming," *SPE/IADC Drilling Conference and Exhibition*, Hague, Netherlands, Mar. 2019.

[3] **Yuchen Jin**, Xuqing Wu, Jiefu Chen, and Yueqin Huang, "A physics-driven deep learning network for subsurface inversion," *National Radio Science Meeting*, Boulder, CO, USA, Jan. 2019.

[4] **Yuchen Jin**, Wenyi Hu, Xuqing Wu, and Jiefu Chen, "Learn low wavenumber information in FWI via deep inception based convolutional networks," *The 88th SEG Annual Meeting*, Anaheim, CA, USA, Oct. 2018.

[5] **Yuchen Jin**, Xuqing Wu, Jiefu Chen, Zhu Han, and Wenyi Hu, "Seismic data denoising by deep residual networks," *The 88th SEG Annual Meeting*, Anaheim, CA, USA, Oct. 2018.

[6] **Yuchen Jin**, Qiuyang Shen, Xuqing Wu, Yueqin Huang, and Jiefu Chen, "Affordable and fast geosteering inversion using a physics-driven deep learning network," *Rice Data Science Conference*, Houston, TX, USA, Oct. 2018.

Talks

[1] **Yuchen Jin**, Xuqing Wu, Yueqin Huang, and Jiefu Chen, "A physics-driven deep learning network for inversion of directional resistivity measurements," *SPWLA Resistivity SIG Meeting*, Houston, TX, USA, Nov. 2018.

[2] Wenyi Hu, **Yuchen Jin**, Xuqing Wu, and Jiefu Chen, "A deep learning approach to cycle-skipping mitigation in FWI," *Post Convention Workshop on Machine Learning and Data Analytics for Geosciences, The 88th SEG Annual Meeting*, Anaheim, CA, USA, Oct. 2018.

[3] **Yuchen Jin**, Qiuyang Shen, Xuqing Wu, Yueqin Huang, and Jiefu Chen, "Non-parametric machine learning and inverse problems for geosteering applications," *Post Convention Workshop on Machine Learning and Data Analytics for Geosciences, The 88th SEG Annual Meeting*, Anaheim, CA, USA, Oct. 2018.

Public Projects

FFmpeg Encoder Decoder for Python:

- **Description**: a C++ based FFmpeg Encoder/Decoder for Python 3.5+ & numpy 1.13+.
- **Web page**: cainmagi.github.io/FFmpeg-Encoder-Decoder-for-Python

Deep Learning Utilities:

- **Description**: a C++ based tool collection for enhancing the pre-processing and IO of deep learning.
- **Web page**: cainmagi.github.io/projects/python_deeputilities

Dockerfiles:

- **Description**: a collection of dockerfiles for NVIDIA DGX-230 machine.
- **Web page**: cainmagi.github.io/Dockerfiles