CHENLONG **WANG**

Algorithm Engineer

📞 0086-13917456521
✉ clwang88@gmail.com
🌐 www.chenlongwang.cn
🐙 www.github.com/chenlonw

INTERNSHIP & WORK EXPERIENCES

SAIC MOTOR - ANJI ARTIFICIAL INTELLIGENCE LAB
- Combinational optimization algorithm design & development
- Machine learning algorithm application
- RESTful algorithm SDK development

SENIOR ALGORITHM ENGINEER

Aug 2017 - Now

TONGJI UNIVERSITY OCEAN OBSERVATION OFFICE（INTERNSHIP）
- Geo sensor data organization
- Geophysics signal processing
- Data assimilation

GEOPHYSICS DATA ENGINEER

Apr 2017 - Jul 2017

PROJECT EXPERIENCES

DATA AND ANALYTICS SOLUTIONS FOR THE EVCARD CAR-SHARING COMPANY

This project with a view to help the Evcard to operate its commercial system intelligently based on the historical operation data. It forecasts the quantity of order during the morning peak hours based on the historical data set. The result can be used to dispatch vehicles in the midnight. It also analyzes the utilization of sites in order to manage the operation cost.

ALGORITHM ENGINEER

Nov 2018 - Now

SPEAKER RECOGNITION SYSTEM FOR SAIC MOTOR

This project with the purpose to develop a voice print recognition system for SAIC Motor company. It is designed to unlock the vehicle with the voice print. I am responsible to provide the algorithm to implement the system.

ALGORITHM ENGINEER

Oct 2018 - Now

AUTOMATIC PARTS INTELLIGENT SCHEDULING SYSTEM DEVELOPMENT FOR JAGUAR & LAND ROVER (CHINA)

This project aims to provide a transportation schedule for vehicle parts logistics. It is an extension of the previous project SPRUCE, which is customized for VOLKSWAGEN (CHINA).

ALGORITHM PRINCIPAL

June 2018 - Sep 2018

CITY EXPRESS SCHEDULING SYSTEM DEVELOPMENT FOR ANJI NON-STANDARD BUSINESS

This project with the purpose to construct a business pattern for ANJI city express from the algorithm optimization perspective. It includes urban distribution center selection, load pooling, vehicle assignment, real-time scheduling, route optimization. I am the minor principal for this project, who is responsible for algorithm design/development and business communication.

ALGORITHM PRINCIPAL

Jan 2018 - June 2018

VEHICLE SCHEDULING SYSTEM DEVELOPMENT FOR ANJI LOGISTICS

This project aims to provide an automatic vehicle assignment system for the ANJI logistics. It manages the vehicles with task assignment, task recommendation, estimate time arrival (ETA), real-time emergency response. I am responsible for algorithm design and development.

ALGORITHM ENGINEER

Jan 2018 - May 2018

AUTOMOTIVE PARTS INTELLIGENT SCHEDULING SYSTEM (SPRUCE) DEVELOPMENT FOR VOLKSWAGEN (CHINA)

This project is designed for automatically providing a transportation schedule for automotive parts logistics, which includes parts packing, load pooling, vehicle route optimization and vehicle assignment. As one of three algorithm developers, I was responsible for developing the route optimization, vehicle assignment, and algorithm API modules.

ALGORITHM ENGINEER

Aug 2017 - Feb 2018

MEDIA PARAMETER OPTIMIZATION ALGORITHM DEVELOPMENT FOR KAUST UNIVERSITY, SAUDI ARABIA

An algorithm for estimating media parameters from geo sensor data. I was involved to numerically solve the boundary condition of the corresponding partial differential equation and provided a data decoupling method.

ALGORITHM ENGINEER

Dec 2015 - Jan 2017

DATA ASSIMILATION ALGORITHM DEVELOPMENT FOR NTNU/STATOIL, NORWAY

Solving a nonlinear optimization problem with equational constrain. I was responsible for deriving the gradient of a self-designed objective function based on the Lagrange multiplier method and numerically implemented the solution with high performance computing cluster in C programming.

ALGORITHM PRINCIPAL

Aug 2014 - Aug 2016

EDUCATION

TONGJI UNIVERSITY, Ph.D. MAJOR IN GEOPHYSICS

Sep.2011- May. 2017

NORWEGIAN UNIVERSITY OF SCIENCE AND TECHNOLOGY , VISITING Ph.D IN APPLIED PHYSICS

Dec. 2015- Aug. 2014

TONGJI UNIVERSITY, B.S MAJOR IN GEOPHYSICS

Sep. 2007- May. 2011

AWARDS

- **Excellent Ph.D. graduates in Shanghai**
- **Scholarship for studying abroad of China**

KNOWLEDGE

- **Optimization**
- **Numerical calculation**
- **Operation**
- **Probability theory**
- **Linear algebra**

SKILLS

- **C**
- **Python**
- **MPI/OpenMP**
- **C-CUDA Programming**
- **Linux**

PUBLICATIONS

- **2018**:
  Wang C.L., Cheng J.B., Weibull W.W. and Arntsen B. Elastic wave equation migration velocity analysis preconditioned through mode decoupling. Geophysics doi: 10.1190/geo2018-0181.1

  Wang T.F., Cheng J.B., Guo Q. and Wang C.L. Elastic wave-equation-based reflection kernel analysis and traveltime inversion using wave mode decomposition. Geophysical Journal International, 215(1), 450–470, doi: https://doi.org/10.1093/gji/ggy291

- **2016**:
  Wang C.L., Cheng J.B., and Arntsen B. Scalar and vector imaging based on wave mode decoupling for elastic reverse time migration in isotropic and TI media. Geophysics, 81(5), S383-S398, doi :10.1190/GEO2015-0704.1

  Yu P.F., Geng J.H., and Wang C.L..Separating quasi-P-wave in transversely isotropic media with a vertical symmetry axis by synthesized pressure applied to ocean-bottom seismic data elastic reverse time migration. Geophysics, 81(6) C295-C307, doi :10.1190/geo2016-0108.1

  Yu P.F., Geng J.H., Li X.B. and Wang C.L. Acoustic-elastic coupled equation for ocean bottom seismic data elastic reverse time migration. Geophysics, 81(5), S333-S345, doi : 10.1190/geo2015-0535.1

  Cheng J.B., Alkhalifah T., Wu Z.D., Zou P. and Wang C.L.. Simulating pro- pagation of decoupled elastic waves using low-rank approximate mixed-domain integral operators for anisotropic media. Geophysics, 81(2), T63–T77, doi :10.1190/geo20150184.1

- **2013**:
  Wang C.L., Cheng J.B., Yin C. and Liu H. Microseismic events location of surface and borehole observation with reverse time focusing using interferometry technique. Chinese J. of Geophys,56(9) :3184-3196, doi :10.6038/cjg20130931

- **2012**:
  Cheng J.B., Wang T.F., Wang C.L., and Geng J.H. Azimuth-preserved local angle-domain prestack time migration in isotropic, vertical transversely iso- tropic and azimuthally

CONFERENCE PAPER

- **2017**:
  Wang C.L., Cheng J.B., Weibull W.W. and Arntsen B. Analysis of converted- wave extended images for shear velocity estimation with wave mode decoupling, 87th SEG Technical Program Expanded Abstracts, Houston, United States.

  Wang T.F., Cheng J.B., Guo Q. and Wang C.L., Elastic wave equation reflection traveltime inversion using dynamic warping and wave mode decomposition. 79th EAGE Conference and Exhibition, Paris, France.

  Wang C.L., Cheng J.B., P/S separation of multi-component seismogram recorded in anisotropic media. 79th EAGE Conference and Exhibition, Paris, France.

  Wang C.L., Weibull W.W., Cheng J.B., and Arntsen B., Automatic shear-wave velocity analysis with elastic reverse time migration. 79th EAGE Conference and Exhibition, Paris, France.

Wang C.L., Cheng J.B., and Weibull W.W., 3D vector imaging of converted waves for fractured reservoirs. 79th EAGE Conference and Exhibition, Paris, France.

2015:
Wang C.L., Cheng J.B., and Arntsen B. Imaging condition for converted waves based on decoupled elastic wave modes. 85th SEG Technical Program Expanded Abstracts, New Orleans, United States.

Wang T.F. Cheng J.B. and Wang C.L.. Elastic wave mode decoupling for full waveform inversion. 77th EAGE Conference and Exhibition, Madrid, Spain.

Wang C.L. Cheng J.B. and Arntsen B. Numerical pure wave source implementation and its application to elastic reverse time migration in anisotropic media. 77th EAGE Conference and Exhibition, Madrid, Spain.

2014:
Wang C.L. Cheng J.B. and Wang T.F. Local angle domain elastic reverse time migration in TI media. 76th EAGE Conference and Exhibition, Amsterdam, The Netherlands.

Wang C.L. Cheng J.B. and Wang T.F. Local angle domain elastic reverse time migration in anisotropic media. SPG/SEG International Geophysical Conference, Beijing, China.

2012:
Wang C.L., Cheng J.B., and Kang W. Separating wave-modes of prestack elastic seismograms using pure mode wave propagators in anisotropic media. 83rd SEG Technical Program Expanded Abstracts, Las Vegas, United States.

2011:
Wang C.L. Cheng J.B. Micro-seismic events location using reverse time method with interferometric imaging condition. SPG/SEG International Geophysical Conference, Shenzhen, China.

WORKSHOP INVITED REPORT

2017:
Cheng J.B., Wang T.F. and Wang C.L. Mode decomposition-based precondi- tioning for elastic wave equation reflection traveltime inversion and migration velocity analysis. 3rd SEG workshop in full waveform inversion, Manama, Bahrain.

2016:
Cheng J.B., Wang C.L. Vector imaging of the decomposed elastic wave modes for 3d heterogeneous ti media. 17th International Workshop on Seismic Anisotropy, Austin, United States

2015:
Wang C.L. Cheng J.B. and Arntsen B. Propagating decomposed elastic wave- fields by first- and second-order wave equations using low-rank k-space method for isotropic media. Lofoten Seminar. Svalbard, Norway

Cheng J.B., Wang C.L. and Wang T.F. Elastic wave mode decoupling for seis- mic imaging and inversion. The workshop of APSWLIM, Prage, Czech Republic