# Chi Zhao (Vector)

#### **EDUCATION**

Saint Petersburg State University 2021 - 2025 (Expected) PhD in Applied Mathematics and Control Processes Saint Petersburg, Russia Saint Petersburg State University 2019 - 2021Saint Petersburg, Russia M.S. in Applied Mathematics and Informatics (GPA: 4.9/5.0) Beijing Institute of Technology Jul. 3 – 28, 2017 ACM Summer Camp Beijing, China Yanan University 2015 - 2019B.S. in Computer Science (GPA: 3.1/4.0) Yanan, China

#### WORKING EXPERIENCE

Huawei Inc.Sep. 2021 – PresentResearcherSaint Petersburg, RussiaWisedu Inc.Sep. 2016 – May. 2019Software EngineerYanan, China

#### Project Experience

Russian Science Foundation Grant No. 22-21-00346

Saint Petersburg, Russia

Fast calculation of massive high dimensional vector similarity

May 2018 - Aug. 2018

Algorithm Engineer

Yanan, China

2023

2023

This project improves the efficiency of the nearest neighbor algorithm and won the 3<sup>rd</sup> prize in the China Software Cup 2018.

Online news classification system based on CNN

Mar. 2018 - May. 2018

Full Stack Engineer

Researcher

Yanan, China

This project has obtained a Chinese software registration certificate and won the 3<sup>rd</sup> prize in the Computer Design Competition 2018.

#### PATENT / COPYRIGHT CERTIFICATES

#### A program for modeling the opinion dynamics in two-layer networks

NO. 2023661532

 $Russian\ Computer\ Software\ Copyright\ Registration\ Certificate$ 

2018

Online News Classification System Based on Convolutional Neural Network

NO. 2018SR502097

 $Chinese\ Computer\ Software\ Copyright\ Registration\ Certificate$ 

### OPEN SOURCE PROJECTS

**ShapG** | python  $\cdot$  feature importance algorithm  $\cdot$  centrality measures

- A Python package for feature importance algorithms based on Shapley values.
- This package can also be used to calculate the centrality in the graph.

News Classification |  $python \cdot NLP \cdot CNN \cdot text \ classification$ 

- Online News Classification System Based on Convolutional Neural Network.
- This project was awarded the provincial 3<sup>rd</sup> prize in the 2018 national computer design competition.

#### SKILLS

**Programming:** Python  $\cdot$  C/C++  $\cdot$  Go  $\cdot$  Matlab/Octave  $\cdot$  Julia  $\cdot$  R  $\cdot$  SQL  $\cdot$  LATEX

ML Libraries: Tensorflow · PyTorch · Keras · Scikit-Learn Developer Tools: Git · Docker · Google Cloud Platform

 $\mathbf{OS} \colon \mathbf{Windows} \, \cdot \, \mathbf{MacOS} \, \cdot \, \mathbf{Arch} \, \, \mathbf{Linux}$ 

Languages: Chinese (native), and English (fluent)

#### RESEARCH INTERESTS

 $Graph \ Algorithms \cdot Centrality \ Measures \cdot Machine \ learning \cdot Explainable \ Artificial \ Intelligence \cdot Probability \ Theory \cdot Statistics$   $Data \ Compression \cdot Coding \ Theory \cdot Time \ Series \ Analysis \cdot Optimization \cdot Stochastic \ Modeling \cdot Stochastic \ Processes$ 

LATEX Source: github.com/vectorsss/cv | Web Version: cv.zhaochi.ru

#### Selected Publications

- 1. Zhao C., Parilina E. M. Opinion Dynamics in Two-Layer Networks with Hypocrisy // Journal of the Operations Research Society of China. - 2024. - Mar. - Vol. 12, no. 1. - P. 109-132.
- 2. Zhao C., Parilina E. M. Analysis of consensus time and winning rate in two-layer networks with hypocrisy of different structures // Vestnik of Saint Petersburg University. Applied Mathematics. Computer Science. Control Processes. – 2024. – Vol. 20, no. 2. – P. 170-192.
- 3. Zhao C., Parilina E. M. Network Structure Properties and Opinion Dynamics in Two-Layer Networks with Hypocrisy // Mathematical Optimization Theory and Operations Research. - Cham: Springer Nature Switzerland. -2024. – P. 300-314.
- 4. Zhao C., Parilina E. M. Consensus time and winning rate based on simulations in two-layer networks with hypocrisy // 2023 7th Scientific School Dynamics of Complex Networks and their Applications (DCNA). - 2023. - P. 68-71.
- 5. **Zhao C.**, Parilina E. M. Centrality measures and opinion dynamics in two-layer networks with replica nodes // arXiv  $preprint\ arXiv: 2406.18780v2. -2024. -2406.18780v2.$
- 6. Zhao C., Liu J., Parilina E. M. ShapG: new feature importance method based on the Shapley value // arXiv preprint arXiv:2407.00506. - 2024. - 2407.00506. (Accepted by Engineering Applications of Artificial Intelligence)

#### Community Service

#### Reviewer for journals and conferences

- Engineering Applications of Artificial Intelligence (EAAI)
- International Conference On Computational Optimization (ICOMP)

#### Conferences

International Conference On Computational Optimization (ICOMP 2024)  Visitor	Innopolis, Russia Oct. 10 - Oct. 12, 2024
Mathematical Optimization Theory and Operations Research (MOTOR 2024)  Oral Presentation	Omsk, Russia June. 30 - July. 06, 2024
Game Theory and Management (GTM 2024) Oral Presentation	Saint-Petersburg, Russia June. 28 - 30, 2023
Game Theory and Management (GTM 2023) Oral Presentation	Saint-Petersburg, Russia June. 28 - 30, 2023
Control Processes and Stability 2022 Oral Presentation	Saint-Petersburg, Russia Apr. 4 - 8, 2022
Control Processes and Stability 2021 Oral Presentation	Saint-Petersburg, Russia Apr. 5 - 9, 2021
The Computing Conference 2017 Visitor	Hangzhou, China <i>Oct. 11 - 14, 2017</i>
Yiban Developer Conference 2017  Developer	Shanghai, China <i>Aug. 2017</i>
Language & Intelligence Summit 2017 $Visitor$	Beijing, China July 23, 2017
Teaching	

Applied Statistics in R Saint-Petersburg, Russia Teaching assistant 2024 Statistical Decisions and Econometrics Saint-Petersburg, Russia Teaching assistant 2022

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## Honours & Awards

Name	Placing	Scope	Awarder	Year
Diploma with distinction	-	University	Saint Petersburg State University	Jun. 2021
Excellent Graduation Thesis (Design)	-	University	Yanan University	Jun. 2019
Excellent Graduate	-	University	Yanan University	Jun. 2019
Merit Student Scholarship	-	University	Yanan University	Dec. 2018
China Software Cup Competition	$3^{\mathrm{rd}}$	China	China Software Cup Organizing Committee	Oct. 2018
Computer Design Competition	$3^{\rm rd}$	Northwest China	Northwest University (China)	May. 2018
Mathematical Contest in Modeling	$2^{\mathrm{nd}}$	Shaanxi	China Society for Industrial and Applied Mathematics	Dec. 2017
Mathematics Competition	$3^{\rm rd}$	Shaanxi	Chinese Mathematical Society	Nov. 2016

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