

# Chi Zhao (Vector)

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## EDUCATION

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

## WORKING EXPERIENCE

<b>Huawei Inc.</b> <i>Researcher</i>	Sep. 2021 – Present <i>Saint Petersburg, Russia</i>
<b>Wisedu Inc.</b> <i>Software Engineer</i>	Sep. 2016 – May. 2019 <i>Yanan, China</i>

## PROJECT EXPERIENCE

<b>Russian Science Foundation Grant</b> <a href="#">No. 22-21-00346</a> <i>Researcher</i>	2023 <i>Saint Petersburg, Russia</i>
<b>Fast calculation of massive high dimensional vector similarity</b> <i>Algorithm Engineer</i> This project improves the efficiency of the nearest neighbor algorithm and won the 3 <sup>rd</sup> prize in the China Software Cup 2018.	May 2018 – Aug. 2018 <i>Yanan, China</i>
<b>Online news classification system based on CNN</b> <i>Full Stack Engineer</i> This project has obtained a Chinese software registration certificate and won the 3 <sup>rd</sup> prize in the Computer Design Competition 2018.	Mar. 2018 – May. 2018 <i>Yanan, China</i>

## PATENT / COPYRIGHT CERTIFICATES

<b>A program for modeling the opinion dynamics in two-layer networks</b> <i>Russian Computer Software Copyright Registration Certificate</i>	2023 <a href="#">NO. 2023661532</a>
<b>Online News Classification System Based on Convolutional Neural Network</b> <i>Chinese Computer Software Copyright Registration Certificate</i>	2018 <i>NO. 2018SR502097</i>

## OPEN SOURCE PROJECTS

[ShapG](#) | *python · feature importance algorithm · 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 · NLP · CNN · 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 · C/C++ · Go · Matlab/Octave · Julia · R · SQL ·  $\LaTeX$   
**ML Libraries:** Tensorflow · PyTorch · Keras · Scikit-Learn  
**Developer Tools:** Git · Docker · Google Cloud Platform  
**OS:** Windows · MacOS · Arch Linux  
**Languages:** Chinese (native), and English (fluent)

## RESEARCH INTERESTS

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

## SELECTED PUBLICATIONS

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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

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### Reviewer for journals and conferences

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

## CONFERENCES

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<b>International Conference On Computational Optimization (ICOMP 2024)</b> <i>Visitor</i>	Innopolis, Russia <i>Oct. 10 - Oct. 12, 2024</i>
<b>Mathematical Optimization Theory and Operations Research (MOTOR 2024)</b> <i>Oral Presentation</i>	Omsk, Russia <i>June. 30 - July. 06, 2024</i>
<b>Game Theory and Management (GTM 2024)</b> <i>Oral Presentation</i>	Saint-Petersburg, Russia <i>June. 26 - 28, 2024</i>
<b>Dynamics of Complex Networks and their Applications (DCNA 2023)</b> <i>Poster Presentation</i>	Kaliningrad, Russia <i>Sep. 18 - 20, 2023</i>
<b>Game Theory and Management (GTM 2023)</b> <i>Oral Presentation</i>	Saint-Petersburg, Russia <i>June. 28 - 30, 2023</i>
<b>Control Processes and Stability 2022</b> <i>Oral Presentation</i>	Saint-Petersburg, Russia <i>Apr. 4 - 8, 2022</i>
<b>Control Processes and Stability 2021</b> <i>Oral Presentation</i>	Saint-Petersburg, Russia <i>Apr. 5 - 9, 2021</i>
<b>The Computing Conference 2017</b> <i>Visitor</i>	Hangzhou, China <i>Oct. 11 - 14, 2017</i>
<b>Yiban Developer Conference 2017</b> <i>Developer</i>	Shanghai, China <i>Aug. 2017</i>
<b>Language &amp; Intelligence Summit 2017</b> <i>Visitor</i>	Beijing, China <i>July 23, 2017</i>

## TEACHING

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<b>Applied Statistics in R</b> <i>Teaching assistant</i>	Saint-Petersburg, Russia <i>2024</i>
<b>Statistical Decisions and Econometrics</b> <i>Teaching assistant</i>	Saint-Petersburg, Russia <i>2022</i>

## HONOURS & AWARDS

<i>Name</i>	<i>Placing</i>	<i>Scope</i>	<i>Awarder</i>	<i>Year</i>
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 <sup>rd</sup>	China	China Software Cup Organizing Committee	Oct. 2018
Computer Design Competition	3 <sup>rd</sup>	Northwest China	Northwest University (China)	May. 2018
Mathematical Contest in Modeling	2 <sup>nd</sup>	Shaanxi	China Society for Industrial and Applied Mathematics	Dec. 2017
Mathematics Competition	3 <sup>rd</sup>	Shaanxi	Chinese Mathematical Society	Nov. 2016