

# Songgaojun Deng

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RESEARCH INTERESTS	Machine learning and data mining motivated by real-world problems in social, health informatics and e-commerce; domain generalization in time series.
EXPERIENCE	<p><b>Postdoc Researcher</b>, AIRLab, University of Amsterdam (Amsterdam, The Netherlands) Jan 2023– Supervised by Prof. dr. Maarten de Rijke and Dr. Sebastian Schelter on time series domain generalization</p> <p><b>Research Engineer Intern</b>, Yahoo Research (Sunnyvale, CA) June–Aug 2020 Supervised by Dr. Datong Chen on industrial cookieless ads targeting.</p> <p><b>Research &amp; Development Intern</b>, Institute of Electronics, Chinese Academy of Sciences Worked on data visualization in real-time computing platforms. July 2015–Mar 2016</p>
EDUCATION	<p><b>Ph.D. Computer Science</b>, Stevens Institute of Technology (Hoboken, NJ) Aug 2018–Aug 2022 <i>Advisor</i>: Dr. Yue Ning <i>Thesis</i>: Modeling and Understanding Societal Events via Graph Neural Networks</p> <p><b>M.S. Software Engineering</b>, Beijing Institute of Technology Sep 2016–June 2018 <i>Thesis</i>: Evolutionary Neural Network Algorithm Based on Triplet Nucleotide Coding</p> <p><b>B.S. Electronic Information Science and Technology</b>, China University of Mining and Technology Sep 2012–June 2016</p>
SERVICES	<p><b>Journal Reviewer</b> IEEE TNNLS, JMLR, IEEE TIP, IEEE TPAMI, Cybernetics and Systems, ACM TIST, ACM TOIS, Expert Systems with Applications, International Journal of Digital Earth, PeerJ</p> <p><b>Program Chair Member</b> AAAI(2022–2024), CIKM(2022), LoG(2022, 2023), SIGIR ICTIR(2023)</p> <p><b>Subreviewer</b> CIKM(2023), SIGIR(2023), BioKDD(2022), WiML@NeurIPS(2020), SDM(2018)</p> <p><b>Volunteer</b> SIGKDD(2019, 2020)</p>
AWARDS	<p><b>Excellence in Graduate Research</b>, Stevens Institute of Technology 2022</p> <p><b>Excellence Doctoral Fellowship</b>, Stevens Institute of Technology 2021</p> <p><b>Departmental Nomination for Microsoft PhD Fellowship</b>, Stevens Institute of Technology 2021</p>
TEACHING & SUPERVISION	<p><b>Recommender Systems, Lecturer</b>, University of Amsterdam June 2023</p> <p><b>Bachelor’s thesis supervision</b>, University of Amsterdam 2023</p> <ul style="list-style-type: none"><li>Improving generalization ability of Transformer models in time series forecasting - <i>Daniel Uyterlinde</i></li><li>Enhancing air quality prediction through transfer learning and model adaptation - <i>Alihan Ince</i></li><li>Integrating crude oil price for improved oil stock price forecasting using LSTM - <i>Taiki Lazos</i></li><li>Time series forecasting of biobridge strain: a deep learning approach with LSTM - <i>Enes Doğan</i></li></ul> <p><b>Natural Language Processing, Lecture material preparer</b>, Stevens Institute of Technology 2019</p>
COMPETENCES	<p><b>Languages</b> Mandarin (<i>native</i>), English (<i>fluent</i>)</p> <p><b>Techniques</b> Python, SQL, PHP, JavaScript, PyTorch, Keras, DGL, Scikit-Learn, Pandas, git, L<sup>A</sup>T<sub>E</sub>X</p>

- TUTORIALS
- [1] Deng, Songgaojun, Jindong Wang, and Maarten de Rijke. "Out-of-Distribution Generalization in Time Series" *AAAI*, 2024 (To appear).
  - [2] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Explainable AI for Societal Event Predictions: Foundations, Methods, and Applications" *AAAI*, 2021.
- SELECTED PUBLICATIONS
- [1] Deng, Songgaojun, Olivier Sprangers, Ming Li, Sebastian Schelter, Maarten de Rijke. "Domain Generalization in Time Series Forecasting." *ACM Transactions on Knowledge Discovery from Data*, 2024.
  - [2] Liu, Cheng, Chenhuan Yu, Ning Gui, Zhiwu Yu, Songgaojun Deng. "SimGCL: Graph Contrastive Learning by Finding Homophily in Heterophily." *Knowledge and Information Systems*, 2023.
  - [3] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Causality Enhanced Societal Event Forecasting With Heterogeneous Graph Learning." *2022 IEEE International Conference on Data Mining (ICDM)*. *IEEE*, 2022.
  - [4] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Robust Event Forecasting with Spatiotemporal Confounder Learning." *Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*. 2022.
  - [5] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Understanding event predictions via contextualized multilevel feature learning." *Proceedings of the 30th ACM International Conference on Information & Knowledge Management*. 2021.
  - [6] Deng, Songgaojun, et al. "Cola-GNN: Cross-location attention based graph neural networks for long-term ILI prediction." *Proceedings of the 29th ACM international conference on information & knowledge management*. 2020.
  - [7] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Dynamic knowledge graph based multi-event forecasting." *Proceedings of the 26th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining*. 2020.
  - [8] Deng, Songgaojun, Huzefa Rangwala, and Yue Ning. "Learning dynamic context graphs for predicting social events." *Proceedings of the 25th ACM SIGKDD International Conference on Knowledge Discovery & Data Mining*. 2019.
- SELECTED TALKS
- [1] "Modeling and Understanding Societal Events via Graph Neural Networks" at *AIRLab, University of Amsterdam*. March 7, 2022.
  - [2] "Modeling and Understanding Societal Events via Graph Neural Networks" at *CISPA Helmholtz Center for Information Security*. Online. September 15, 2022.
  - [3] "Modeling and Understanding Societal Events via Graph Neural Networks" at *Vector Institute for Artificial Intelligence*. Online. July 28, 2022.
  - [4] "Modeling and Understanding Societal Events via Graph Neural Networks" at *NEC Laboratories America*. Online. March 11, 2022.
  - [5] "Learning Dynamic Patterns for Predicting Societal Events" at *Yahoo Research, Targeting Science Team*. Online. August 2020.
- REFERENCES
- [1] **Prof. dr. Maarten de Rijke**, Distinguished University Professor, University of Amsterdam. Email: m.derijke@uva.nl. Ph: +31 6 51 938 523
  - [2] **Dr. Yue Ning**, Assistant Professor, Department of Computer Science, Stevens Institute of Technology. Email: yue.ning@stevens.edu. Ph: +1 201-216-5486
  - [3] **Dr. Huzefa Rangwala**, Professor, Department of Computer Science, George Mason University/ML Scientist, Amazon. Email: rangwala@gmu.edu. Ph: +1 703-993-3826
  - [4] **Dr. Wendy Hui Wang**, Associate Professor, Department of Computer Science, Stevens Institute of Technology, Email: hwang4@stevens.edu. Ph: +1 201-216-8736