Hanchao Ma | Curriculum Vitae

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Education

- **Case Western Reserve University** — **Cleveland OH**
  PhD student in Computer Science, Advisor: Yinghui Wu — *2019–Present*
- **Washington State University** — **Pullman WA**
  PhD student in Computer Science, Advisor: Yinghui Wu — *2017–2019*
- **University of Pittsburgh** — **Pittsburgh PA**
  Master of Science in Information Science, — *2012–2014*
- **Nanjing University of Posts and Telecommunications** — **Nanjing China**
  Bachelor in Management Information System, — *2008–2012*

Research Interests

My research focuses on graph data management and analytic: • graph data quality and integration. • graph computation e.g. query suggestion. • Graph based deep learning for graph data analytic e.g. GNN,GCN.

Research Experience

- **Pacific Northwest National Laboratory** — **Richland WA**
  Research Intern, Advisor: Sutanay Choudhury — *May 2018–August 2018*

  • I joined a team and was responsible for implementing a selectivity based algorithm to detect graph patterns in streaming graphs. We implemented the system based on spark platform with scala. My tasks include building infrastructures for generating graph streams and implementing core pattern detection models.
  •URL `https://sutanay.github.io/publications/2015_streamworks_edbt.pdf`
- **Microsoft Research Asia** — **Beijing China**
  Research Intern, Advisor: Ying Yan — *July 2016–Sept2016*

  Path Guide Indoor Navigation System
  • Path Guide is a cross platform indoor navigation system which is based on a system that use data capturing by sensors in mobile phones to form tracks for leading users to destination. This system is based on an advanced DTW algorithm
  •Join the team and working on the Android and web app for the system. (.NET MVC, Android SDK, Azure Cloud storage) Working with UI designer to implement the User Interface and Implementing server side based on Azure storage and Rest Web Service
  •URL `https://play.google.com/store/apps/details?id=com.microsoft.msra.followus.app`

Selected Publication:

Google Scholar: https://scholar.google.com/citations?user=aMxBWxQAAAAJ

- "RoboGNN: Robustifying Node Classification under Link Perturbation", Sheng Guan, Hanchao Ma, Yinghui Wu in IJCAI 2022.

- "Subgraph Query Generation with Fairness and Diversity Constraints", Hanchao Ma, Sheng Guan, Mengying Wang, Yen-shuo Chang, Yinghui Wu in ICDE 2022.
- "Diversified Subgraph Query Generation with Group Fairness", Hanchao Ma, Sheng Guan, Christopher Toomey, and Yinghui Wu. in WSDM 2022.
- "GEDet: detecting erroneous nodes with a few examples", Sheng Guan, Hanchao Ma, Sutanay Choudhury, Yinghui Wu in VLDB,demo track, 2021.
- "Explaining Missing Data in Graphs: A Constraint-based Approach", Qi Song, Peng Lin, Hanchao Ma, Yinghui Wu in ICDE, 2021
- "GRIP: Constraint-based Explanation of Missing Entities in Graph Search", Qi Song, Peng Lin, Hanchao Ma, Yinghui Wu in SIGMOD, demo track, 2021
- "GEDet: Adversarially Learned Few-shot Detection of Erroneous Nodes in Graphs", Sheng Guan, Peng Lin, Hanchao Ma, Yinghui Wu in IEEE BigData, 2020. (Best Paper Award)
- "Attribute-Driven Backbone Discovery" Sheng Guan, Hanchao Ma, Yinghui Wu in KDD, 2019.
- "Ontology-based Entity Matching in Attributed Graphs" Hanchao Ma, Morteza Alipourlangouri, Yinghui Wu, Fei Chiang, Jiaxing Pi in VLDB, 2019.
- "An efficient ride-sharing framework for maximizing shared route" Na Ta, Guoliang Li, Tianyu Zhao, Jianhua Feng, Hanchao Ma, Zhiguo Gong in TKDE, 2017.
- "Automatic Fact Checking for Knowledge Graphs: An Experimental Study" Peng Lin, Yinghui Wu, Hanchao Ma, Jialiang Shen in VLDB, 2017.

Industry Experience

- **ChemAdvisor** **Pittsburgh PA**
  Software Engineer *2015–2016*

  EHSAT Application (Safety data sheet authoring tool)
  •Using WINFORM to improve the performance and usability of UI
  •Designing and implementing the features in backend for copying and immigrating and operating the source data Nodes which are got from Data Access Layer.(.NET, IIS Server, XML ,DAO)
  •Improving the performance of REST Web Service for retrieving the Chemical Phrase by CAS Number and Chemical Name
  •Designing and Implementing the feature for generating and updating the relevant Chemical Phrase of REST Web Service.

  LOLI Desktop Application (Storing and Operating data List)
  •Using XAML WINFORM to improve the performance and usability of UI
  •Refactoring original application to Model-View-Presenter pattern to enable independent testing for Business Modules. (C# &VB.NET,IIS Server, DAO)
  •Using NUnit to implement the unit test for independent testing the data model.

Technical skills

- **Programming Languages:**Java*, Scala, C#, Python, Javascript
- **Tools & Frameworks:** MYSQL, SQLServer, MongoDB, .NET, NodeJS, AngularJS, Spark
- **Selected Courses:** Database, Advanced Database, Data Analytic, Algorithm, Machine Learning, Artificial Intelligence, Deep Learning.