XINYI(CAROL) ZHENG

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EDUCATION

Carnegie Mellon University   **Pittsburgh, PA**
PhD in Computer Science   *Feb. 2021 - Present*

University of Michigan   **Ann Arbor, MI**
B.S. Computer Science, B.S. Mathematics   *May 2020*

- Coursework: Continuous Optimization Methods (grad), Natural Language Processing (grad), Matrix Methods for DSP (grad), Advanced Artificial Intelligence (grad), Coding Theory (grad), Computer Organization, Database Management Systems, Programming Language, Into. to Operating Systems, Machine Learning, Data Mining, Conversational AI, Numerical Methods

Shanghai Jiao Tong University, UM-SJTU Joint Institute   **Shanghai, China**
B.S.E. Electrial and Computer Engineering   *Aug. 2020*

PUBLICATIONS AND MANUSCRIPTS(* INDICATES EQUAL CONTRIBUTION)

[5] **"Global Table Extractor (GTE): A Framework for Joint Table Identification and Cell Structure Recognition Using Visual Context"**, Xinyi Zheng, Doug Burdick, Lucian Popa, Nancy Xin Ru Wang *In Winter Conf. on Applications of Computer Vision, 2021 (WACV-2021).*

[4] **"Mining Persistent Activity in Continually Evolving Networks "**, Caleb Belth, Xinyi Zheng, Danai Koutra. *In Knowledge Discovery and Data Mining, 2020 (KDD-2020).*

[3] **"Combining Information from Curated and Extracted Knowledge Bases to Answer Complex Questions"**, Nikita Bhutani*, Xinyi Zheng*, Kun Qian, Yunyao Li, HV Jagadish, *In Annual Conference of the Association for Computational Linguistics, 2020 (ACL-2020-NLI).*

[2] **"What is normal, What is Strange, and What is Missing in a Knowledge Graph: Unified Characterization via Inductive Summarization"**, Caleb Belth, Xinyi Zheng, Jilles Vreeken, Danai Koutra. *In The Web Conference, 2020 (WWW-2020).*

[1] **"Learning to Answer Complex Questions over Knowledge Bases with Query Composition"**, Nikita Bhutani*, Xinyi Zheng*, HV Jagadish. *In 2019 ACM International Conference on Information and Knowledge Management (CIKM-2019).*

INDUSTRY EXPERIENCE

Special Projects Group, Apple Inc.   **Santa Clara, CA**
Software / Machine Learning Engineer Intern, Manager: Minghuang Ma   *May 2020 -- Jan. 2021*

- Contributed to Apple's internal machine learning platform with K8s, contributed to several key services including email notification, job tracking and data ingestion
- Contributed to 3d data visualization and data search infrastructure, designing an offline rendering pipeline for scalable 3d data exploration
- Designed and implemented a system for large scale machine learning experiment tracking on top of kubeflow ecosystem

Scalable Knowledge Intelligence Group, IBM Research - Almaden   **San Jose, CA**
Research Intern, Mentor: Dr. Nancy XR Wang, Manager: Dr. Yunyao Li   *May 2019 -- Aug. 2019*

Documents in PDF format fail to preserve the formatting of any table the document contains. Table detection and cell structure recognition are crucial tasks as tables contain essential sturctured information. However, it has remained a challenging task with unreliable table extractors in both the commercial and academic space.

- Proposed a systematic framework for vision-guided joint table detection and cell structure recognition, which outperforms previous systems on standard table benchmark.
  - (a) Leveraged a cell detection network to guide the training of the table detection network
  - (b) Presented a hierarchical network and a novel cluster-based algorithm for cell structure recognition by classifying tables, detecting cells and convert this into structure with spatial clustering
- Designed a method to automatically create ground-truth labels for table recognition and used it to create a new dataset,which provides a large real-world data source with fine-grained cell structure annotation for table related tasks

Teaching Experience

University of Michigan — Ann Arbor, MI
Teaching Assistant, EECS476 (Data Mining), Instructor: Prof. Danai Koutra — *Jan. 2020 -- Apr. 2020*
UM-SJTU Joint Institute — Shanghai, China
Teaching Assistant, VV255(Honors Calculus III), Instructor: Dr. Jing Liu — *May 2017 -- Aug. 2017*

Service

Discover-CS Coffee Mentor   *Ann Arbor, MI* — *Fall 2018, Fall 2019*
Database Reading Group Organizer   *Ann Arbor, MI* — *Winter 2019*

Voluntary Experience

Vice President, UM-SJTU Student and Alumni Association — *May 2018 - May 2019*
Outreach Director, Michigan China Forum — *Oct. 2017 - Mar. 2018*
President of Liason Department, Alumni Association of No.2 High School of ECNU — *Sept. 2015 - Sept. 2016*

Skills

Programming Languages: Python, Java, Javascript, C/C++, GoLang, Matlab, Julia, SQL
Framework: Pytorch, Keras, Tensorflow, Spark, Hadoop, Flask, Node.js, React.js, ElasticSearch, Kafka
Tools: Git, Docker, LaTeX, AWS (ECR, S3, SecretsManager)

Honors and Awards

CRA Outstanding Undergraduate Research Award Honorable Mention — *Dec. 2019*
2019 CRA-W GHC Research Scholar   *Orlando, FL* — *Oct. 2019*
3rd place, Bloomberg Coding Challenge   *Ann Arbor, MI* — *Nov. 2017*
Dean's Honor List, University of Michigan   *Ann Arbor, MI* — *Every Semester*