Yuling (Daniel) Shi

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EDUCATION

Shanghai University of Finance and Economics — Shanghai, China
School of Mathematics — Sept 2018 - Present

- Undergraduate in Applied Mathematics (Elite Program), Major GPA: **3.64/4(87.6/100)**, Courses on AI: **Natural Language Processing (4.0), Deeping Learning (4.0), Machine Learning (3.7).**
- Scholarships: People's Scholarship, Outperforming Individual **(2 out of 86)**, Distinguished Student **(2 out of 86)**.
- Solid expertise in: Python (Deep Learning, Scientific Computing), MATLAB, Bash, LaTeX, Git; experienced in: C, C++, Make, Javascript, SQL.

PUBLICATIONS

[1] Xuehai Huang, **Yuling Shi**, Wenqing Wang: A Morley-Wang-Xu element method for a fourth order elliptic singular perturbation problem. (*Journal of Scientific Computing*, 2021)

RESEARCH EXPERIENCE

Research Assistant, Interpreting Predictions of NLP Models — Shanghai, China
Advisor: Dr. Wanyun Cui — Jan 2021 - Present

- Studied recent conference tutorials and papers on interpretation techniques.
- Analyzed changes in gradients of important words during the training process with Pytorch.
- Researched on interpreting how the model learned relations between words from the aspect of Taylor expansion.

Research Assistant, Robust Finite Element Method for A Singular Perturbation Problem — Shanghai, China
Advisor: Prof. Xuehai Huang — Jul 2020 - Feb 2021

- Self-searched for scientific computing (finite element method) packages. Studied scikit-fem in Python, contributed codes and reported bug.
- Implemented a robust multigrid solver with designed preconditioner for decoupled equation and solved large scale linear equations efficiently.
- Discovered and analyzed the super-convergence benefit from a simply modified right hand side.
- Final paper has been published in *Journal of Scientific Computing*.

Principal Investigator, Building Domain Knowledge Graph with Deep Learning Models — Shanghai, China
Advisor: Prof. Xuehai Huang — Mar 2020 - Dec 2020

- Applied NLP models to build a financial knowledge graph, studied models for named entity recognition, relation extraction and event extraction.
- Collected data with Scarpy, stored the data in Neo4j graph database and wrapped them up with Flask framework.
- Generated labels to original sentences and included a BiGRU layer after BERT to improve the performance in named entity recognition task, implemented with Pytorch.
- Awarded as the "Excellent Project" in school and selected for oral presentation **(3 out of 165)**.

Project Leader, Kaggle Question Answering Competition — Shanghai, China
Advisor: Ass.Prof. Hui Fang — Feb 2020 - Jun 2020

- Ensembled models and improved training process by studying research papers to improve performance of BERT and similar models in question answering task.
- Outperformed the best submission in Kaggle leaderboard with smaller models. Implemented experiments in Pytorch including: pre-training on similar dataset, hard negative mining, adding special token, mixed precision training.
- Reached a final GPA of 4.0 in second year among juniors from Elite Program in Department of Electrical Engineering.

ACITIVTIES AND HONORS

1^{st} **Prize in Mathematical Contest in Modeling of SUFE (Ranked 2/70)** — Apr 2020 – Apr 2020
1^{st} **Prize in National Olympiad in Physics (Provincial Area, top 0.02%)** — Sept 2016 – Sept 2017

OTHER SKILLS

Language: English (TOFEL 102), Chinese (mother language)
Team working: President of School Table Tennis Club (with 300+ members)
Interests that make me optimistic: Table tennis (5^{th} place in Shanghai Doubles Championship, 3^{rd} place in Teams)