

DONG SHU

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EDUCATION

Northwestern University, Evanston, Illinois

Master of Science in *Computer Science*

Anticipated 12/24

Cumulative GPA: **4.00/4.00**

Relevant Courses: Deep Learning for NLP, AI for Science, Reinforcement Learning, Deep Learning, Intro to AI, Agile Software Development, Connected and Autonomous Vehicle, Natural Language Processing, Machine Learning

Rutgers University, New Brunswick, New Jersey

Bachelor of Science in *Computer Science*

Graduated 06/23

Cumulative GPA: **3.652/4.00**

Honor: *Cum Laude*

Relevant Courses: Machine Learning Principles, Artificial Intelligence, Design and Analysis of Computer Algorithms, Internet Technology, Software Methodology, Computer Architecture, Data Science, Data Structures

RELEVANT EXPERIENCE

Vertisim AI, Berkeley, California

Machine Learning Intern

05/24 – 08/24

- **Led the development of BidSmart**, a pipeline using **LLaMA 3.1 70B** and **retrieval-augmented generation (RAG)** to integrate company history data with government bidding invitations, generating tailored proposals.
- Implemented **context-aware chunking** to split documents meaningfully, enhancing data retrieval without cutting important sections.
- Used **RAG** to retrieve relevant company data and successful past proposals from a private vector database, improving model performance through in-context learning.

Bridge Legal, Chicago, Illinois

AI Tech Intern

11/23 – 04/24

- **Law Language Model**: Developed and instruction fine-tuned **Gemma** for multi-task legal applications, including Legal Judgment Prediction, Precedent Case Recommendation, and Similar Case Retrieval, utilizing **RAG** and **knowledge graph-based recommendation**.
 - Achieved **81.6% top-5 accuracy** in similar case retrieval, **83.2% top-5 accuracy** in precedent case recommendation, and **79.4% accuracy** in legal judgment prediction, outperforming GPT-4 in all tasks.
- **Advance Data Analysis Assistant**: Integrated **GPT Assistant API** with the company's software to automate tabular data analysis, significantly improving data processing speed and reducing manual efforts.
- **AI Phone Call Assistant**: Developed a real-time **AI-driven phone call system** by integrating **Twilio's voice assistant with GPT assistant**, improving client call handling efficiency and reducing response time.
- **PDF Analysis Assistant**: Implemented **OCR** to convert scanned PDFs into text, facilitating detailed analysis and improving document processing for legal use.

MaxSense Technology, Shanghai, China

AI Deep Learning Algorithm Intern

06/23 – 08/23

- **Trained a YOLOv8 model** for scene object recognition and classification in mining areas, using a combination of open-source, web-scraped, and company proprietary datasets.
- Conducted extensive **manual labeling** to prepare training data, improving detection precision and model accuracy.
- Achieved **94.33% accuracy** and an inference speed of **59ms/step**, detecting vehicles, pedestrians, and traffic signs in real-time to enhance operational safety in mining environments.

WLKATA, Hackensack, New Jersey

Robotic Arm Programmer

05/22 – 05/23

- **Tangram**: Developed a Tangram-solving program directs a robotic arm to solve puzzle.
- **Angle Adjustment**: Developed angle-adjustment program to optimize block orientation on conveyors.
- **Color & Shape Classification**: Developed a classification system to sort blocks by color and shape.
- **Blocks Targeting**: Developed targeting program to enable a robotic arm to pick up specific blocks.

SCHOOL PROJECTS:

- [GAN-Art Generator](#); [Human-Computer Interactable Cooking Recipes](#); [CNN for Anime Facial Classification](#); [Tweet Mining & The Golden Globes](#); [Deep Q Learning Agent on CartPole Task](#); [Face and Digit Classification Using Various Algorithms](#); [Note-Doctor](#); [AI Chess Game](#); [A* Maze Solver](#)...

RESEARCH PUBLICATION:

Google Scholar: <https://scholar.google.com/citations?user=KfIlTroAAAAJ&hl=en>

ACL 2024:

- Jin, Mingyu, Qinkai Yu, **Dong Shu**, Haiyan Zhao, Wenyue Hua, Yanda Meng, Yongfeng Zhang, and Mengnan Du. "The impact of reasoning step length on large language models." arXiv preprint arXiv:2401.04925 (2024).

ICLR Workshop 2024:

- Yu, Jiahao, Yuhang Wu, **Dong Shu**, Mingyu Jin, and Xinyu Xing. "Assessing prompt injection risks in 200+ custom gpts." arXiv preprint arXiv:2311.11538 (2023).

CIKM 2024:

- **Dong Shu**, Haoran Zhao, Xukun Liu, David Demeter, Mengnan Du, and Yongfeng Zhang. "LawLLM: Law Large Language Model for the US Legal System." arXiv preprint arXiv:2407.21065 (2024).

ECAI 2024:

- Zhang, Chong, Mingyu Jin, **Dong Shu**, Taowen Wang, Dongfang Liu, and Xiaobo Jin. "Target-driven Attack for Large Language Models." In ECAI, CCF B. 2024.

ACML 2024:

- **Dong Shu**, Tianle Chen, Mingyu Jin, Yiting Zhang, Mengnan Du, and Yongfeng Zhang. "Knowledge Graph Large Language Model (KG-LLM) for Link Prediction." arXiv preprint arXiv:2403.07311 (2024).

arXiv Preprint:

- **Dong Shu**, Jin, Mingyu, Suiyuan Zhu, Beichen Wang, Zihao Zhou, Chong Zhang, and Yongfeng Zhang. "Attackeval: How to evaluate the effectiveness of jailbreak attacking on large language models." arXiv preprint arXiv:2401.09002 (2024).
- Jin, Mingyu, Qinkai Yu, **Dong Shu**, Chong Zhang, Lizhou Fan, Wenyue Hua, Suiyuan Zhu et al. "Health-llm: Personalized retrieval-augmented disease prediction system." arXiv preprint arXiv:2402.00746 (2024).
- **Dong Shu**, and Zhouyao Zhu. "Generative Models and Connected and Automated Vehicles: A Survey in Exploring the Intersection of Transportation and AI." arXiv preprint arXiv:2403.10559 (2024).
- Zhang, Chong, Xinyi Liu, Mingyu Jin, Zhongmou Zhang, Lingyao Li, Zhengting Wang, Wenyue Hua, **Dong Shu** et al. "When AI Meets Finance (StockAgent): Large Language Model-based Stock Trading in Simulated Real-world Environments." arXiv preprint arXiv:2407.18957 (2024).
- **Dong Shu**, Mingyu Jin, Tianle Chen, Chong Zhang, and Yongfeng Zhang. "CEIPA: Counterfactual Explainable Incremental Prompt Attack Analysis on Large Language Models." arXiv preprint arXiv:2407.09292 (2024).

LEADERSHIP

Advance Women in Computer Science (AWiCS) Organization, Rutgers University, New Jersey

Peer Tutor

09/22 – 05/23

- Provided academic support to students taking Intro to Computer Science and Data Structures courses, assisting students with homework and class assignments.

Rutgers Chinese Students and Scholars Association (RCSSA)

Head of General Affairs Department

01/22 – 05/22

- Led and organized Chinese New Year Gala, Freshmen Airport Pickup Service, and Social Multicultural Fair as a core member.

HONORS AND REWARDS:

- Best Survey Award (FCS 2024) – Awarded the paper "Large Vision-Language Model Security: A Survey"
- Cum Laude Honor (2023) – Awarded to my Bachelor's degree