Dong Wang

Portfolio LinkedIn GitHub

wang6213@purdue.edu
(765) 767-2998

Education

- **Purdue University** — West Lafayette, IN
  B.S. in Computer Science; GPA: 3.6/4.0 The Dean List — *Jan 2024 - Dec 2025*
- **Northeastern University (CN)** | *Transferred to Purdue University in Jan 2024* — China
  B.S. in Communication Engineer; GPA: 3.9/4.0 — *Sep 2022 - Dec 2023*

Skills

- **Languages:** C/C++, Python, Java, JavaScript, SQL, HTML, CSS, MATLAB
- **Tools:** PyTorch, LangChain, Scikit-Learn, Pandas, Numpy, Matplotlib, Docker, React, Vue.JS, Django

Experience

- **Bank of China** | *Algorithm Intern* — *Shanghai | Jun. 2023 – Sep. 2023*
  - **Overview**: Contributed to the development of an innovative **symbolic regression algorithm** for **customer service analysis**, modeling and predicting customer satisfaction levels based on **multiple free variables** such as transaction frequency, service feedback, and product usage patterns.
  - **Algorithm Details**: Introduced a **variable control method** that significantly **reduced the search space complexity**, enhancing efficiency in discovering more **accurate nonlinear regression expressions** with multiple independent variables.
  - **Performance**: Resulted in an increase of **20%** in prediction accuracy for customer behavior and preferences, and a decrease of **15%** in the customer churn rate.
- **Prof. Yexiang Xue's Lab** | *Research Assistant* — *West lafayette | Jan. 2024 – Present*
  - **Building Models**: Developed a framework for **predicting 2D video** sequences using **physical laws**, involving position information identification, dynamic parameter derivation, motion simulation with a physics engine, mapping textures with neural networks, and generating final predicted frames using conditional generative adversarial networks (cGANs).
  - **Improvement**: By leveraging known physical laws, our framework **reduces the reliance on large datasets** for training and enhances the model's ability to **predict complex and abrupt motions**. By relying on texture mapping, long-term predicted frames still keep **high quality**
- **Purdue Aerial Robotics** | *Project Intern* — *West Lafayette | Jan. 2024 – May. 2024*
  - **Overview**: Contributed to the development of a **goal-conditioned manipulation agent** that utilizes **hand-drawn sketches** to specify desired outcomes for **object manipulation tasks**, such as object rearrangement on a tabletop.
  - **Performance**: Achieved superior semantic alignment and precision in tabletop tasks, reducing errors in goal achievement and improving policy robustness to sketch detail variations and visual distractions by up to **2.3X**.
  - **Professional Development**: Enhanced expertise and soft skills by attending events such as Oral Presentation, Technical Documentation, Managing Data with Python, PyTorch Tutorial, and Deep Learning Theory.

Project

- **EchoGen** | *Iterative Optimization System for LLM* — *Jun. 2024 – Present*
  - **Object Recognition and Physics Modeling**: Utilized ChatGPT-4 API for image-based object recognition and code-based physics modeling to simulate object behavior in videos
  - **Refinement Methodology**: Developed a method for refining LLM-generated results using predefined code formats, multiple independent calls, and feedback loops.
  - **Simulation and Optimization**: Integrated a physics engine with iterative optimization techniques to improve accuracy and stability in video predictions.
- **SmartGA** | *LLM-Guided GA for function fitting* — *Jun. 2024 – Present*
  - **GA Enhancement**: Using LLM to guide the direction of the evolution of the Genetic Algorithm to generate more accurate initial populations and guide mutations, enhancing fitting accuracy and reducing computation time.
  - **Project Focus**: Combined LLM's inference abilities with traditional GA methods to achieve better function fitting results for objects like circles in video frames.
- **ArtTune** | *Fine-tuning the CLIP model on a custom dataset of sketches* — *Jun. 2024 – Present*
  - **Model Adaptation**: Fine-tuned the CLIP model on a custom dataset of labeled sketches to improve recognition and understanding of sketch-based visual data.
  - **Objective**: Enhanced the pre-trained CLIP model's performance on recognizing and categorizing sketches through targeted training.