Zhouxiang (Joshua) Sun

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EDUCATION

University of Illinois Chicago — Chicago, IL
Master of Science in Civic Analytics — Expected December 2025

Tianjin University of Science & Technology — Tianjin, China
Bachelor of Mechanical Engineering and Industrial Design — August 2021

EXPERIENCE

YOGO Patent and Trademark Agency Limited Company — Guangzhou, China
Patent Agent — October 2021-June 2023

- Drafted and prosecuted a portfolio of **200+** patent applications, including **30+** invention patents, **60+** utility models across diverse high-tech domains, and approximately **100** design patents.
- Achieved a composite patent grant rate of **90%** across all drafted applications (invention, utility model, and design).
- Maintained a success rate of **80%+** in overcoming examiner rejections by drafting persuasive Office Action responses and negotiating claim scope with patent examiners.
- Provided comprehensive patent services for leading international clients such as Guangzhou Automobile Group **(GAC)**, China Mobile, South China University of Technology **(SCUT)**, and Sun Yat-sen University Hospital.
- **Key Projects & Achievements:**
  - **Mechanical Engineering**: Led patent mining and application for GAC, secured a key patent for a novel vehicle frame fixture used on assembly lines.
  - **Telecommunications**: Authored and prosecuted a patent for a new data encryption method for China Mobile.
  - **Block Chain & Computer Vision**: Secured patents for SCUT on a novel blockchain model based on the Byzantine Fault Tolerance algorithm and an advanced computer vision processing method utilizing **YOLOv8**.
  - **Medical Devices**: Prosecuted a patent for a multi-functional dental oral retractor for a clinician at The First Affiliated Hospital of Sun Yat-sen University.

RESEARCH PROJECT

- **Automated TMS-EEG Artificial Removal using a Variational Autoencode (VAE)**
  - Designed and implemented a novel deep learning model to automate artifact removal from TMS-EEG data, addressed the inefficiencies of manual workflows by using **Python**.
  - Sourced from public datasets (Nemar, OpenNeuro), the pipeline utilizes a specialized VAE to denoise spectrograms generated via Short-Time Fourier Trasnform (STFT) by using **MATLAB**.
  - Optimized the EEG data artifact removal pipeline, reducing processing time by **90% (a 10x speedup)** compared to traditional Fast ICA and other machine learning-enhanced workflows on datasets of the same scale.
- Yelp Review sentiment Analysis & Modeling
  - Analyzed 40,000+ reviews to predict sentiment, compared dictionary methods, Random Forest, and a Large Language Model (LLM).
  - Engineered TF-IDF features and developed an **XGBoost** model that achieved a prediction accuracy of **89%** by **R**.
- A comprehensive AI governance framework for the City of Warrenville, IL
  - In-depth policy research, comparative case studies of peer municipalities, and quantitative data analysis.
  - Led regular meetings with the **City Administrator** and all department heads to coordinate project schedules, manage documentation, and align team tasks.

TECHNICAL SKILLS

- Python, R, MATLAB, SQL, Excel, Git
- EEG, public and business data processing, exploratary data analysis (EDA)
- Machine learning modeling (**VAE, XGBoost, MLP, SVM**)