

# Jinge Wang

DATA SCIENTIST · AI & PREDICTIVE MODELING

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## Summary

Data Scientist with 5+ years of experience developing and deploying machine learning models that turn complex data into actionable insights. Skilled in predictive modeling, feature engineering, and statistical learning using Python and modern ML frameworks. Experienced in leading projects, mentoring junior team members, and collaborating across disciplines to deliver reliable, production-ready data solutions. Recognized for combining strong analytical rigor with practical implementation to improve decision-making and operational performance.

## Core Competencies

<b>Technical</b>	Python, R, SQL, AWS, Git, Docker, Jupyter, Linux, LaTeX
<b>ML &amp; AI</b>	Predictive Modeling, Deep Learning, LLMs, Multimodality, Feature Engineering, Data Visualization, Model Explainability
<b>Leadership</b>	Team Mentorship, Project Management, Cross-Functional Collaboration, Stakeholder Communication, Agile Workflows

## Work Experience

### Polygon Health Analytics LLC

Remote

DATA SCIENTIST

Oct 2024 – Sep 2025

- Led **data science** programs leveraging large-scale real-world **datasets** to support AI-driven **analytics** and **applications**.
- Designed and deployed **LLM-based pipelines** to extract pathology indicators from reports, improving accuracy and efficiency.
- Supervised and mentored four interns across projects including Vaccine Vibes, iSMILE, and FDA RWE Analysis.
- Engage stakeholders to present solutions, gather feedback, and iteratively refine products to align with user needs and strategic objectives.
- Collaborated with software engineering and executive teams to deliver **data products** under tight timelines.

### West Virginia University

Morgantown, WV

POSTDOCTORAL FELLOW

Oct 2023 – Sep 2024

- Led independent AI research applying **large language models** to real-world analytical tasks and **data integration** challenges.
- Adapted **LLMs** through **prompt engineering** and RAG to enable domain-specific automation and decision support.
- Developed end-to-end **pipelines** demonstrating practical AI deployment and published key findings in peer-reviewed journals.
- Mentored students and collaborated across technical and analytical teams to guide project design and **model evaluation**.

### West Virginia University

Morgantown, WV

GRADUATE RESEARCH ASSISTANT

Jan 2018 – May 2023

- Carried out large-scale **data-driven** studies using advanced **machine learning** methods to extract patterns and validate hypotheses.
- Managed large image **datasets** (100k+) with efficient preprocessing, **feature extraction**, and experiment tracking **pipelines**.
- Developed **deep learning models** and analytical frameworks for representation learning and interpretability.
- Collaborated across disciplines to publish peer-reviewed studies showcasing **data-science**-driven research innovation.

## Selected Projects

### MAGIC Platform — Pathology Indicator Extraction and Multimodal Analytics

- Developed MAGIC, a multimodal **data integration** platform supporting the NIH Cancer Research Data Commons (CRDC) ecosystem for unified analysis of genomics, imaging, and clinical **datasets**.
- Architected a serverless AI pipeline using AWS Textract, Lambda, Step Functions, and GPT-4 to extract key pathology indicators from unstructured PDFs, achieving over 90% efficiency improvement versus manual workflows.
- Built a dedicated evaluation web app enabling pathologists to visualize, review, and validate model outputs, enhancing transparency and usability.
- Extended MAGIC to support multimodal survival prediction and cBioPortal export by integrating RNA-seq and pathology WSI features into **deep-learning models** for outcome analysis.

### iSMILE Mobile App — AI-Enabled Health Management for SLE

- Developed a local-first iOS app using AI-assisted coding to support individualized health management for lupus (SLE) patients.
- Implemented core modules including authentication, profile, EHR integration, risk prediction, and community forum with secure on-device **data handling**.
- Integrated EHR and external **datasets** into **predictive models** for personalized care recommendations and optimized UX through stakeholder feedback.
- Guided an intern to enhance app functionality and streamline feature optimization.

### Vaccine Vibes — LLM Optimization for Vaccine Newsletter

- Led a team of two interns to improve AI-powered vaccine-news **classification** through prompt engineering and hierarchical filtering.
- Enhanced classification accuracy by 30% and reduced duplication in topic clustering for large-scale content streams.
- Benchmarked multiple **LLMs** to identify optimal models for efficient news summarization and deployment.

# Education

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## West Virginia University

PH.D. IN COMPUTER SCIENCE

- Specialization in Artificial Intelligence, Data Analysis, and Signal Processing.

Morgantown, WV

Aug 2016 – May 2023

## West Virginia University

M.S. IN STATISTICS

- Focus on Statistical Modeling, Regression, and Experimental Design.

Morgantown, WV

Sep 2013 – Dec 2015

## Anhui University of Finance and Economics

B.M. IN ACCOUNTING

- Completed foundational coursework in management and accounting.

Anhui, China

Sep 2007 – Jul 2011

# Publications

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- **J Wang**; et al. “ChatGPT-Polished Writing Boosts the Risk of Human-Authored Manuscripts Being Miscredited as AI-Generated.” JAADi. (2025)
- R Cao; **J Wang**; et al. “Feature-based encoding of face identity by single neurons in the human amygdala and hippocampus.” Nat. Hum. Behav. (2025)
- **J Wang**; et al. “Limitations and risks of custom GPTs in dermatology. Comment on ‘ReconGPT: A novel artificial intelligence tool and its potential use in post-Mohs reconstructive decision-making.’” JAAD. (2025)
- **J Wang**; et al. “Preliminary evaluation of ChatGPT model iterations in emergency department diagnostics.” Sci. Rep. (2025)
- Z Feng; G Hu; B Li; **J Wang**. “Unleashing the power of ChatGPT in finance research: opportunities and challenges” FIN. (2025)
- **J Wang**; et al. “Adapting ChatGPT for Color Blindness in Medical Education.” Ann Biomed Eng. (2025)
- **J Wang**; G Hu. “Boosting GPT-4V’s accuracy in dermoscopic classification with few-shot learning. Comment on ‘Can ChatGPT vision diagnose melanoma? An exploratory diagnostic accuracy study.’” JAAD. (2024)
- **J Wang**; et al. “Bioinformatics and Biomedical Informatics with ChatGPT: Year One Review.” QB. (2024)
- **J Wang**; et al. “Scientific Figures Interpreted by ChatGPT: Strengths in Plot Recognition and Limits in Color Perception.” NPJ Precis. Oncol. (2024)
- S K Valicharla; **J Wang**; et al. “Morning Glory Flower Detection in Aerial Images Using Semi-Supervised Segmentation with Gaussian Mixture Models.” Agric. Eng. (2024)
- **J Wang**; et al. “A critical period for developing face recognition.” Patterns. (2024)
- R Cao; **J Wang**; et al. “Neural mechanisms of face familiarity and learning in the human amygdala and hippocampus.” Cell Reports. (2024)
- **J Wang**; R Cao; et al. “Face identity coding in the deep neural network and primate brain.” Commun. Biol. (2022)
- X Xu; X Xiong; **J Wang**; X Li. “Deformable kernel convolutional network for video extreme super-resolution.” ECCV Wksp. (2020)

# Certificates

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- 2023 **Prompt Engineering for ChatGPT**, Vanderbilt University
- 2023 **Python Essentials for MLOps**, Duke University
- 2023 **Supervised Machine Learning: Regression and Classification**, DeepLearning.AI, Stanford University
- 2023 **Introduction to Large Language Models**, Google Cloud
- 2023 **Introduction to Healthcare**, Stanford University
- 2015 **SAS Certified Advanced Programmer for SAS 9**, SAS Institute
- 2015 **SAS Certified Base Programmer for SAS 9**, SAS Institute

# Honors & Awards

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- 2024 **Oral presentation**, TRCCC
- 2020 **Advances in Image Manipulation workshop and challenges Runner-Up Award**, ECCV AIM