

# Gerald K. White, M.S.

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Results-driven data scientist with expertise in machine learning and AI and **demonstrated experience designing end-to-end data pipelines to improve business operations**. Known for **translating technical solutions knowledge into measurable outcomes** as well as leading research teams funded by high-profile organizations such as the US Navy.

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## PROFESSIONAL EXPERIENCE

### **AI Research Scientist – New Jersey Institute of Technology** New York, NY 09/2023 – Present

- Led a team of four researchers to **deliver AI products funded by the US Navy**.
- Engineered an end-to-end automated ML pipeline for ship maintenance predictions, addressing data sensitivity issues and enabling proactive logistics planning while **improving prediction accuracy by 40%**.
- Migrated the data science repository to a government Azure cloud instance, which boosted cross-team collaboration and **reduced pipeline execution time by 65%**.
- Created detailed metrics and visuals to present project progress regularly to senior Navy officials, including Admirals and Program Directors.
- Currently designing a Retrieval-Augmented Generation (RAG) system to streamline the completion of complex Navy forms, **reducing processing time and human error**.

### **AI Research Assistant – Toyota Technical Institute of Chicago** Chicago, IL 02/2023 – 08/2023

- Conducted NLP research to **improve reinforcement learning algorithms for Large Language Models** (the technology behind ChatGPT).
- Identified limitations in the widely used Proximal Policy Optimization (PPO) algorithm and proposed alternative architectures that **improved model alignment by 5-15%** on key benchmarks. Codebase can be found [here](#).
- Experimentation code included obtaining and preprocessing large open-source text corpora, training modern LLMs (LLaMA, GPT, etc.) using reinforcement learning algorithms, and evaluating performance against benchmarks. Utilized frameworks include Hugging Face, PyTorch, and OpenAI Gym.
- Presented progress and improvements in weekly meetings with project stakeholders.

### **Data Scientist Intern – Lubrizol** Chicago, IL 06/2022 – 10/2022

- **Developed and improved various machine learning models** (Python, R) which estimated material composition and other physical attributes and were used to develop better chemical products.
- Implemented a stacked random forest model for a large material performance dataset, **increasing accuracy by 60%** and improving model value.
- Augmented existing time-series chemical concentration model by introducing Bayesian feature selection and ARIMA, **resulting in 44% higher predictive accuracy** and better model reliability.

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## EDUCATION

### **M.S. in Statistics – University of Chicago** 09/2021 – 06/2023

Completed coursework in statistics, computer science, machine learning, and deep learning.

### **B.S. in Chemical Engineering – Villanova University** 09/2015 – 05/2019

Completed coursework (minor in mathematics) in chemical engineering, upper-level mathematics, and computer science.

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## RESEARCH PROJECTS

### **Reinforcement Learning with Human Feedback as a Tool for Knowledge Distillation** 02/2023 – 08/2023

- Researched novel Reinforcement Learning (RL) for Large Language Models (LLMs) algorithm to improve model alignment and understand recent success of RLHF.

### **M.S. Thesis: Exploring Denoising Autoencoder Architectures in Self-Supervised Learning** 08/2022 – 02/2023

- Developed paper and experimentation repository for a novel self-supervised learning mechanism designed to reduce dependency on labeled data and enhance model transferability. Paper [here](#) and repository [here](#).

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## LANGUAGES & SKILLS:

**Python (advanced) | R (advanced) | SQL (intermediate) | Bash (intermediate) | Java (beginner) | Django (beginner)**  
Machine Learning | Data Analysis | Natural Language Processing | Product Development | Cross-functional Communication

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## CERTIFICATIONS & EXAMS:

- Microsoft AZ-900: Azure Fundamentals
- Microsoft AI-900: Azure AI Fundamentals