Gersi Doko

Pronounced Ger-si Dough-co
GersiD.github.io Gersi[.]Doko[@]unh[.]edu
linkedin.com/in/GersiDoko github.com/GersiD
Location: Dover, NH

Technical Skills

Tools: Tableau, Power-BI, AWS, Azure, Docker, Git, Go, Java, Python, TensorFlow, Pytorch
Research Interests: Risk sensitive optimization, Optimal decision-making, Human-LLM Collaboration, Bandits, Partial monitoring, Reinforcement learning, Inverse reinforcement learning, Risk sensitive machine learning, Transformers, Attention, LLMs
Current Work: Deep risk sensitive reinforcement learning, Robust RL, LLM Applications

Education

University of New Hampshire Expected May 2026
Doctor of Philosophy (PhD) in Computer Science *Durham, New Hampshire*

- **Relevant Coursework:** Advanced Algorithms in Machine Learning, Deep-Q Learning, Reinforcement Learning, Risk Sensitive Decision-Making, LLM-Driven Optimization, Foundation Model Theory, Pytorch, TensorFlow

University of New Hampshire Completed May 2022
Bachelor of Science in Computer Science ***Summa Cum Laude*** *(GPA: 3.98 / 4.00)* *Durham, New Hampshire*

- **Relevant Coursework:** Data Structures and Algorithms (C++), Prob & Stat in CS (Python), Intro to CS II (C++), Linear Algebra w/Computational Applications (Python), Reinforcement Learning (Python), Neural Networks (Python), AWS, Azure, REST, Strong work ethic

Experience

UNH RL^2 Lab May 2022 – Present
Research Assistant *Durham, NH*

- Studying machine learning under Dr. Marek Petrik in the RL^2 Lab
- Researching and publishing robust solutions to risk-averse decision-making problems, with a focus on RL and LLMs
- Efficiently implementing and testing RL algorithms in Julia and Python

NextStep Health August 2021 – May 2022
Data Scientist – Intern *Cambridge, MA*

- Implemented on-prem models to predict patient outcomes using Python and TensorFlow
- Delivered internal tools that reduced turnaround time for data analysis by 30%

Liberty Mutual May 2021 – May 2022
Software Engineer *Dover, NH*

- Fostered code reuse by creating a shared Python library, reducing code duplication by more than 80%
- Optimized new data storage and retrieval system using AWS S3, reducing on-premise storage costs by 25%

UNH Interoperability Lab June 2018 – May 2021
Senior Test Engineer *Durham, NH*

- Reviewed and engineered test media for IEEE Standard 802.3, improving test coverage for back-plane and Base-T

Publications

ROIL: Robust Offline Imitation Learning | *First publication accepted to RLJ (Reinforcement Learning Journal)*

- Led novel research on a robust method for training agents from data using offline imitation learning, surpassing previous work by leveraging consistent policy sets
- Improved on all existing IRL methods by allowing for covariate shift, which is common in the real-world

Deep Reinforcement Learning based Optimization of an Island Energy-Water Microgrid System
Interdisciplinary work with UNH Civil Engineering Dept.

- Developed a deep reinforcement learning model to optimize the energy and water usage of an off-shore microgrid
- Real-world RL application which resulted in a 20% increase in island sustainability, with less human intervention

LLM Thematic Analysis for Agriculture Research
Preprint

- Led collaboration with UNH Agriculture Dept. to develop a thematic analysis pipeline for categorizing research laboratories across the USA
- Implemented a human-in-the-loop LLM system to improve accuracy and reduce workload, leveraging LangChain

Achievements

- Technical reviewer for the **Reinforcement Learning Journal**
- Presented at the *first* **RLC (Reinforcement Learning Conference)** in 2024
- Received the **Dean's Award** for Academic Excellence in Computer Science
- Awarded the **President's Scholarship** for academic achievement and leadership
- Graduated **summa cum laude** from the University of New Hampshire
- Presented at the **2022 UNH Undergraduate Research Conference**