Tyler Leake

Contact Information

Permanent: Baltimore, MD
Mobile: (724) 371-6958
Email: jtyler.leake@protonmail.com
Website: jtyler.leake.github.io
GitHub: github.com/jtylerleake
LinkedIn: linkedin.com/in/jtylerleake

Research Interests

Machine Learning (ML) and Reinforcement Learning (RL) with a focus on studying and advancing fundamental RL science. Specific interests include multi-agent systems, ensemble strategies, and representation engineering, particularly in an applied context. Broadly interested in the architectures of learning algorithms and their underlying mathematics.

Education

2023 – 2025 **Johns Hopkins University,** Baltimore, MD
Master of Science (M.S.) in Computer Science
GPA: 3.71 / 4.00

2016 – 2020 **Pennsylvania State University,** University Park, PA
Bachelor of Science (B.S.) in Finance
GPA: 3.64 / 4.00

Experience

2021 – 2024 **LoanStreet,** New York, NY
Analyst, Operations Group

- Joined financial technology startup company as an early-stage hire reporting to the COO and CEO. Responsible for technical and non-technical assignments spanning research, growth, platform operations, and product development.
- Key staff contributor in the development, launch, and commercialization of two enterprise software applications: *Loan Analytics* and *Commercial Loan Servicing*.
- Authored foundational, data-centered research to drive product strategy and growth initiatives. Developed full-stack software to support statistical analyses.
- Mined critical insights from large, highly unstructured fixed-income datasets. Designed and automated data engineering tools for extraction and processing.
- Successfully closed $25mm Series B equity financing round from venture capital consortium. Coordinated all phases of transaction alongside management team.

2020 – 2021 **UBS Securities,** New York, NY
Investment Banking Analyst, CCS Americas

- Advised corporate and financial sponsor clients in the U.S. real estate sector on acquisitons; debt and equity capital markets financing; and restructuring deals.
- Advised financial sponsor client on $300mm SPAC IPO. Researched and modeled de-SPAC opportunities; drafted SEC filings; and created marketing materials.
- Advised private equity client on $205mm COVID-19 rescue capital refinancing. Modeled deal structure scenarios and negotiated financing arrangement terms.

Publications

Preprint Papers

[1] *Deep Reinforcement Learning for Financial Decsion-Making: A Vision-Only Learning Approach*, T. Leake, A. Yasin, 2025

Project Sample

Machine Learning Repositories

[1] **Visual Reinforcement Decision Agent**, GitHub
A vision-based reinforcement learning method for algorithmic equities trading. Performed a temporal walk-through cross-validation experiment to evaluate time/asset generalization with gramian angular field (GAF) environments and proximal policy optimization (PPO).

[2] **MIMML: Modality Informed Meta Metric Learner**, GitHub
A meta-model framework for input-agnostic metric learning. Designed a two-level system to project cross-modal data into a shared latent space for distance learning. Trained and fine-tuned the system's networks and performed clustering experiments on unseen data.

[3] **Deep Image Recognition for Surgical Robot**
An image classification pipeline for surgical instruments and tissue structures. Trained classifier with recordings of a porcine nephrectomy procedure with the Da Vinci Surgical System. YOLO11 with DSConvNN architecture acheived 80% accuracy in experiments.

[4] **Factoid Question and Answering Machine**
A modular three-stage information retrieval machine for question answering. Architecture contained question classification, information retrieval, and span-based answer extraction stages. Performed a comparative analysis of NLP methods used in each system phase.

[5] **Racetrack Reinforcement Learning Problem**, GitHub
A classic control reinforcement learning demonstration with a racecar agent. Implemented Value Iteration, Q-Learning, and SARSA algorithms. Performed experiments using different simulated racetrack environments, exploration strategies, and parameter settings.

Technology Stack

Languages

Proficient	Python, SQL, R, Bash/Shell, LaTeX, HTML/CSS
Intermediate	C, C++, Java, Javascript, MATLAB, Visual Basic

Libraries

Data Science	PyTorch, TensorFlow, JAX, Keras, Scikit-learn, Pandas, NumPy, XGBoost
NLP	Gensim, spaCy, NLTK, Flair, Hugging Face Transformers

Software

General	Windows, Linux, Git, Docker, MLFlow, Slurm, Tableau, React, Excel, Powerpoint
Databases	PostgreSQL, MySQL, AWS