Willie McClinton

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EDUCATION

MASSACHUSETTS INSTITUTE OF TECHNOLOGY — Cambridge, MA
Ph.D. in Electrical Engineering and Computer Science, Concentration: AI and Robotics — 2021-TBD

- GPA: 4.8 /5.0 Honors: MIT Presidential Fellowship and NSF GRFP Recipient
- Relevant Coursework: Computational Sensorimotor Learning (A), Robotic Manipulation (A), Theory of Computation (A), Managerial Finance (A), Hardware Arch. for Deep Learning (B), Independent Study in Program Synthesis (Satisfactory)
- Advisors: Drs. Leslie Kaelbling, Tomas Lozano-Perez, and Armando Solar-Lezama

UNIVERSITY OF SOUTH FLORIDA — Tampa, FL
Bachelor of Science in Computer Science, Minor in Mathematics — 2016-2020

- GPA: 4.0 /4.0 Honors: King O'Neal Scholar, Barry Goldwater Scholar, and Dean's List – All semesters
- Relevant Coursework: Diff. Eq. (A+), Linear Algebra (A+), Calc. III (A), Vector Calc. (A), Prob. and Stats. (A), NLP (A)

RESEARCH & WORK EXPERIENCE

BOSTON DYNAMICS AI INSTITUTE — Cambridge, MA
Research Engineer (1st intern) — November 2022 - present

- Developed a Task and Motion Planning system with hand designed skills and perception for BDAII's quadruped robotic dog Spot, as well as integrated a basic simulator enabling IK and FK motion planning, enhancing system efficiency for planning in real-time
- Designed human interfacing capabilities with our planning system utilizing LLMs for automated translation to propositional logic

GOOGLE RESEARCH — Mountain View, CA
Research Scientist — October 2020 - December 2021

- Improved unsupervised and semi-supervised computer vision systems by adding the ability to learn representations that are equivariant to data augmentations during Contrastive Learning, creating a 100x improvement in augmentation time for new datasets
- Implemented modern and traditional RL algorithms as baselines (Dynamic Programming, Monte Carlo, TD-Learning, Sarsa, DDPG, A3C, DQN, etc.) and explored research directions in improving the convergence speed of Deep Hierarchical RL approaches

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY — Gaithersburg, MD
Summer Undergraduate Research Fellow — May 2017 - August 2017

- Parsed the YFCC100M and HAVIC databases (>100 Million vids) with SQL to synthesize eval datasets for the competition
- Reduced scoring time by 10x by implementing parallelization in the new Ruby/Rake evaluation
- Collaborated with small team of 3 to manage past systems from previous Multimedia Event Detection Evaluations

PERSONAL PROJECTS

Factor Investing Crypto Benchmarks — GitHub
https://github.com/wmcclinton/crypto-trading-baselines — March 2023 – present

- Reproduced trading strategies from Ken French's market baselines to the cryptocurrency market, including HML, UMD, and STREV, the S&P500 of Value, Momentum, and Reversal strategies respectively, reported with Sharpes and market correlations
- Optimized portfolio with CVXPY (open source convex opt. solver); Backtested and deployed through Kraken, and Binance APIs

AnetaBTC (Co-Founder) — Cambridge, MA
https://anetabtc.io/ — October 2021 – May 2023

- Built decentralized protocol for wrapping BTC on Ergo and Cardano Blockchain ($11 Million Market Cap via CoinMarketCap)
- Managed team of 5 across 4 continents (Americas, Asia, and Europe) with Jira (issue tracking and org), GitHub (version control), and ensured vertical alignment by applying proper cadence; Successfully launched testnet with over 1000 users

SELECTED PUBLICATIONS

1. "Learning Efficient Abstract Planning Models that Choose What to Predict" McClinton*, W., and Kumar*, N. et al. Best Paper at RSS Workshop on L4TAMP. In Preparation for Submission to CoRL Conference on Robot Learning (2023)
2. "Predicate Invention for Bilevel Planning" Silver, T., et al. AAAI Conference on Artificial Intelligence (2023)
3. "Steerable Representation Learning" Bhardwaj, S., and McClinton, W., et al. [https://arxiv.org/abs/2302.11349] (2023)
4. "Evaluating Ad-hoc and Instance Video Search, Events Detection, Video Captioning, and Hyperlinking" Awad, G., et al. TREC Video Retrieval Evaluation (TRECVID) (2017)

Patents: US Patent 11048928 and 10963742.

SKILLS & INTERESTS

- Software: Adv. Excel, CCXT, CVXPY, Git, Numpy, Matplotlib, Pytorch, Pandas, SciPy, TensorFlow, REST APIs, and YFinance
- Languages: Proficient in C, C++, JavaScript, Matlab, Python; prior experience in Bash, C#, Lisp, Java, R, Ruby/Rake, and SQL
- Certificates: Bloomberg Market Concepts Cert., Coursera ML/DL by A. Ng, HarvardX STAT110x, and Schonfeld SEE Datathon
- Interests: Volunteering, Cryptocurrency, Hobby-Robotics, and Brazilian Jiu Jitsu