Maan Qraitem

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Education

Boston University — Boston, MA
Masters/Ph.D in Computer Science — *Sep 2020 – Now*

- **Advisors:** Kate Saenko and Bryan A. Plummer
- **Relevant Coursework:** Computer Vision, Deep Learning, Multimodal Learning, Advanced Optimization.

Colby College — Waterville, ME
B.A in Computer Science and Statistics; ***GPA: 3.97 (Summa Cum Laude)*** — *Sep 2016 – May 2020*

Publications

- SLANT: Spurious Logo ANalysis Toolkit: **Maan Qraitem**, Piotr Teterwak, Kate Saenko, Bryan A. Plummer. In Submission.
- Vision-LLMs Can Fool Themselves with Self-Generated Typographic Attacks: **Maan Qraitem**, Nazia Tasnim, Piotr Teterwak, Kate Saenko, Bryan A. Plummer. In Submission.
- From Fake to Real: Pretraining on Balanced Synthetic Images to Prevent Bias: **Maan Qraitem**, Kate Saenko, Bryan A. Plummer. ECCV 2024.
- Bias Mimicking: A Simple Sampling Approach for Bias Mitigation: **Maan Qraitem**, Kate Saenko, Bryan A. Plummer. CVPR 2023.
- From Coarse to Fine-grained Concept based Discrimination for Phrase Detection: **Maan Qraitem**, Bryan A. Plummer. CVPR Workshop on Computer Vision in the Wild 2023.
- Bridging the gap: Machine learning to resolve improperly modeled dynamics: **Maan Qraitem**, Dhanushka Kularatneb, Eric Forgostonc and M. Ani Hsieh. Phsyica D Journal 2020.
- Real-time physics-based removal of shadows and shading from road surfaces: Bruce A. Maxwell, Casey A. Smith, **Maan Qraitem**, Ross Messing Spencer Whitt, Nicolas Thien Richard M. Friedhoff. CVPR Workshop on Autonomous Driving 2019.
- Circadian oscillations persist in low malignancy breast cancer cells: Sujeewa S. Lellupitiyage Don, Hui-Hsien Lin, Jessica J. Furtado, **Maan Qraitem**, Stephanie R. Taylor, Michelle E. Farkas. Cell Cyle 2019.
- Analyses of BMAL1 and PER2 Oscillations in a Model of Breast Cancer Progression Reveal Changes With Malignancy: Hui-Hsien Lin, **Maan Qraitem**, Yue Lian, Stephanie R Taylor, Michelle E Farkas. Sage 2019.

Work Experience

Boston University — Boston, MA
PhD Candidate — *Sept 2020 – Now*

- Research detection and mitigation of spurious correlations in Computer Vision models as well as representation learning for Phrase Detection. My work was published in CVPR, ECCV, and CVPR workshops.

Iteris Inc — Santa Ana, Cal
Machine Learning Research Intern — *May 2020 – Aug 2020*

- Implement a Graph Neural Nets for traffic prediction which incorporates spatiotemporal traffic data. The method improved performance over in house model by $\sim 20\%$
- Incorporate weather data into the model through an additional CNN branch improving performance by $\sim 10\%$

GRASP Lab, University of Pennsylvania — Philadelphia, PA
Research Intern — *May 2019 – Aug 2019*

- Design and Train Spatio-temporal Recurrent Deep Learning models that effectively bridge the gap between inaccurate equations and ground truth observations
- Generate Spatio-temporal data from variances of the Navier Stokes equations using finite difference solvers.

Bigelow Lab/Colby College — Waterville, ME
Research Intern — *May 2018 – Aug 2018*

- Develop bio diversity vision monitoring systems for coral reefs using state of the art Deep Learning classification and tracking system
- Supervise collecting an image dataset of labeled fish species.

Colby College Waterville, ME

Research Intern *May 2017 – Aug 2017*

- Develop and Implement time series analysis algorithms (wavelet transform) to understand the behavior of circadian clocks in cancer cells.

Teaching

Guest Lecturer-Machine Learning CS542
Boston University, Spring 2023.
Introduced basic deep learning concepts such as backpropagation, neural net design, etc.

TA-Machine Learning CS542
Boston University, Spring 2021, Spring 2022.
Conducted Labs and Office Hours where I covered foundational topics in Machine Learning such as neural Nets, Linear Regression, SVM(s), etc

TA-Introduction to Applications Programming CS108
Boston University, Fall 2020.
Conducted Labs and Office Hours where I covered foundational topics in Computer Science such basic programming logic, recursion, etc.

TA-Intro to Probability Theory
Colby College, Fall 2018.
Conducted Labs and Office Hours where I covered foundational topics in Probability Theory such as basic combinatorics, random variables, probability distributions, Bayesian inference, hypothesis testing, confidence intervals, and linear regression.

Mentoring

Phoebe Chen Undergraduate Student, Boston University, 2023
Advised an analysis project of responsible use of ChatGPT for journalism.

Professional Services

Reviewer
CVPR, ECCV, NeurIPS.

Skills

Programming: Python (Primary) C, C++ (Secondary)

Frameworks: Pytorch, Tensorflow, Numpy, Pandas, Git.

Awards & Achievements

Charles A. Dana Scholar Colby College

Rhodes Scholarship Finalist Colby College