Matthew Hyatt

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EDUCATION

Loyola University Chicago — Expected Graduation 05/24
BS Computer Science — Dean's List 2021-2022
Cumulative GPA: 3.59 / 4.0 — Presidential Scholarship recipient
Director's Scholarship recipient

RESEARCH FELLOWSHIPS

· NFS Research Experience for Undergraduates (REU)	$8000	2022
· Loyola Provost Fellowship	$3500	2022
· Loyola FYRE Scholarship	$1000	2020

EXPERIENCE

Purdue University - Duality Lab 2022
Research Assistant - - Internship

· Designed interview and survey of DL practitioners in order to illuminate difficulties in pre-trained neural network (PTNN) selection.

· Reviewed relevant works to motivate research direction. Evaluated security flaws in PTNN supply chain. Proposed solutions for increasing secure software distribution and submitted to cybersecurity conference.

· Built automated pipeline to validate the authenticity of 100+ PTNN performance claims (accuracy, mAP, F1). Implemented via automatic web scraping of model zoos for model parameters and running inferences over corresponding dataset. *Python(Requests, Beautiful Soup, OpenCV, TensorFlow, Pytorch, HuggingFace) JSON.*

· Funded by a National Science Foundation grant to Dr. Jaime Davis

Loyola University Chicago - Software Systems Laboratory 2021 - Present
Research Assistant - Part Time

· Optimizing convolution layer in CNN image processing by processing only "relevant" image patches as determined by saliency map.

· Analyzed TensorFlow Model Garden machine learning libraries for coding practices. Classified developer issues by reading error logs to determine the source of errors. Collaborated with a group of 6 researchers at Purdue University.

· Mined data from FOSS GitHub repositories. Developed automated command line interface tools to measure productivity, defect density and bus-factor of software projects with multiprocessing. Created graphs to visualize results. *Python (Numpy, Pandas, Matplotlib, Scikit-learn) JSON*

· Funded by a Google gift to Dr. George K.Thiruvathukal.

Loyola University Chicago - FYRE Program 2020 - 2021
Research Assistant - Internship

· Recipient of FYRE scholarship. Worked closely with faculty mentors and 10 peers to develop critical analysis skills, ask research questions, and read scholarly papers.

· Surveyed 40 students to understand the efficacy of online learning through Zoom. Designed software to score student attention span. Performed statistical analysis on results through command line interface. Organized discoveries on a research poster and presented to a faculty board. *Python (Numpy, Matplotlib) YAML*

ORGANIZATIONS

Loyola AI Club 2022 - Present
President and Founding Member

· Lead a group of 4 in club marketing and long-term goal planning. Host industry leaders to speak at university. Prepare and speak at workshops to facilitate intellectual development of club members.

· Interpret state of the art improvements on AI for club members in an easy to read news feed.

SKILLS

Languages	Python, Java, Bash, JavaScript, SQL, HTML, CSS
ML / Big Data	PyTorch, TensorFlow, HDFS, Spark
Program Design	Object Oriented Programming, Test Driven Development, Agile Development
Coursework	Data Structures, Machine Learning, Natural Language Processing, Deep Learning, Front End Web Development, Big Data Analytics

PUBLICATIONS

CONFERENCES

[1] Wenxin Jiang, Nicholas Synovic, Rohan Sethi, Aryan Indarapu, **Matt Hyatt**, Taylor R. Schorlemmer, George K. Thiruvathukal, and James C. Davis. 2022. An Empirical Study of Artifacts and Security Risks in the Pretrained Model Supply Chain. In Proceedings of the 2022 ACM Workshop on Software Supply Chain Offensive Research and Ecosystem Defenses (SCORED '22), https://doi.org/10.1145/3560835.3564547
ACM SCORED 2022

[2] Nicholas Synovic, **Matt Hyatt**, Rohan Sethi, Sohini Thota, Shilpika, Allan J. Miller, Wenxin Jiang, Emmanuel S. Amobi, Austin Pinderski, Konstantin Läufer, Nicholas J. Hayward, Neil Klingensmith, James C. Davis, George K. Thiruvathukal "Snapshot Metrics Are Not Enough: Analyzing Software Repositories with Longitudinal Metrics."
ASE 2022 Tool Demo.

POSTERS

[1] Hyatt, Matt, Klingensmith Neil, Kuhl, Amy, Palmer, Jake, Sethi, Rohan, Stoneman, Ethan, Synovic, Nicholas, Thota, Sohini, & Thiruvathukal, George K. (2022). CLIME: Command Line Metrics for Git Projects. Loyola University Chicago Spring Research Symposium. https://ecommons.luc.edu/csrs/ay2021-2022/poster/2/