Zachary Eichenberger

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Motivated student studying computer science, with a strong ML background looking for a position in computer science. Interests include natural language processing, and machine learning.

Education

University of Michigan, Ann Arbor Accelerated Expected Graduation: May 2024

Master of Science in Computer Science

- Accelerated masters program

University of Michigan, Ann Arbor Expected Graduation: May 2023

Bachelor of Science in Computer Science, Minor in Mathematics *GPA: 3.89*

- Relevant Coursework: Natural Language Processing, Differential Equations, Introduction to Machine Learning, Multivariable Calculus, Discrete Mathematics, Linear Algebra, Software Engineering, Algorithm Design

Experience

Undergraduate Researcher Sept. 2022 – Present

University of Michigan, LAUNCH lab *Ann Arbor, MI*

- Investigated novel decoding algorithms to boost large language model coherence and fluency

Intern & Intern Cohort Leader May. 2022 – Aug. 2022

IBM Research, Scalable Knowledge Intelligence Team *San Jose, CA*

- Created novel algorithms leveraging novel Deep Learning and NLP techniques to leverage a fusion of textual and positional information in PDF table identification and extraction.
- Implemented those algorithms within Flask server, reducing error rate within IBM Table Extraction by 40%.

Undergraduate Researcher Jan. 2022 – Present

Future of Programming Lab *Ann Arbor, MI*

- Investigated the use of ML based automatic code editing agent operating on abstract syntax trees
- Developed Graph Neural Net models and architecture in Python and OCaml for team creating end-to-end Reinforcement Learning system.

Intern & Intern Cohort Leader May. 2021 – Aug. 2021

IBM Research *Ann Arbor, MI*

- Created database cleaning module for Open-source project, Text Extensions for Pandas. Made 75+ commits, and became #4 contributor on project
- Created state of the art dataset error detection algorithms using novel clustering approach to detect systematic errors present in dataset labels, resulting in significant boost over previous methods. Paper in preparation
- Designed and ran month-long experiment evaluating noise-robust learning and dataset cleaning algorithms using Pytorch and Scikit-learn; trained and evaluated 100+ models on NLP datasets

Research Assistant January 2021 – June 2021

Smart and Sustainable Automation Lab *Ann Arbor, MI*

- Developed low-cost 3d printer fault detection sensor. Co-inventor on pending patent, and Co-author on paper.

Intern May. 2020 – Aug. 2020

IBM Research *Ann Arbor, MI*

- Independently developed portion of Open-source library (in Python) to ingest data from scanned tables
- Automated regression testing using Travis CI and documentation using Sphinx Auto documentation
- Resulted in Co-authorship of "Identifying Incorrect Labels in the CoNLL-2003 Corpus" Proceedings of the CoNLL Conference, Nov. 2020.

Technical Skills

Programming Languages: Python, C++, OCaml, Golang, Java, JavaScript
Skills: Unix Systems, Git — Centralized and Integration manager workflows, Sphinx Auto-documentation, Travis CI, JUnit, Pytest, PyTorch, Scikit-learn