Nadav Oren

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Education

- **University of Michigan** — Ann Arbor, Michigan
  BSE Computer Science and BS Mathematics; GPA: 3.89 — *August 2020 - May 2024*
  Courses Taken: *Machine Learning, Computer Security, Differential Equations,Computer Organization, ,Mathematical Statistics, Intro Real Analysis, Linear Algebra,*
  Courses Taking This Semester:Into Modern Algebra, Databases

Skills

- **Languages**: C++/C, Python, Java, Javascript, SQL, R, VBA, HTML, MATLAB, Mathematica
- **Frameworks/Tools/Platforms**: Linux, Git, Docker, mySQL, Oracle SQL Developer, MongoDB, React, Tensorflow, Numpy, Pandas, scikit-learn,Pytorch, Wireshark, Mulesoft, ReadyAPI, NewRelic, JMS
- **Foreign Languages**: Hebrew (Fluent/Native Speaker)

Experience

- **Censored Planet Lab** — Undergraduate Researcher
  Ann Arbor, MI — *2023-*
  - Researching the detection and measurement of internet censorship worldwide. Currently helping write a paper about new methods for choosing where to test for censorship
- **Allegis Group** — Hannover, MD
  Data Integration Intern — *Summer 2022*
  - Helped develop and conduct automated testing on REST APIs to integrate business applications using Mulesoft, ReadyAPI, Orcale SQL Devloper, NewRelic as part of an Agile team
  - Learned about Distributed Computing, Microservices, Middleware/Messaging and conducted Automation Testing on enterprise APIs
- **LTN Global Communications** — Columbia, MD
  Software Developer Intern — *Summer 2021*
  - Helped create,debug,and test a customer-facing web portal in React as well its the gRPC and REST based API
  - Learned about web networking technologies and architecture, developing software on remote Linux-based servers, and databases

Projects

- **Dog Breed Classifier (2022)**: Created a Convolutional Neural Network model using Pytorch that classifies between Border Collies and Golden Retrievers. Used data augmentation and transfer learning as well as using pooling and dropout layers to improve model performance.
- **Reddit Comment Sentiment Classifier(2022)**: Developed a Machine Learning model to classify positive and negative sentiments of Reddit comments. Created functions for feature extraction with a Bag Of Words model while removing stop words and performing lemmatization. Tried several different scikit-learn support vector machine models while optimizing hyperparameters with cross-validation. Measured and analyzed performance of model using several different performance metrics.
- **Web Security (2022)**: Performed simulated SQL Injection, Cross Site Scripting, and Cross Site Request Forgery attacks against a custom website with various levels of defense mechanisms for a computer security course project. Learned about common vulnerabilities that websites have against these attacks and how to defend against them
- **Buffer Overflows (2022)** : Performed buffer overflow attacks against simulated targets with escalating levels of difficulty. Used both simpler methods as well as more advanced methods such as Return-Oriented Programming
- **Pipelined Processor Simulator (2022)** : Produced a simulator in C for a five-stage pipelined processor for a simple instruction set that included data forwarding to resolve control hazards and a predict not taken branch prediction policy
- **Log Manager (2021)**: Wrote a Command-line Program in C++ that can manage and make queries on log files. The program could find and sort entries by keyword, category, and timestamp and store and print all relevant entries
- **Construction of Real Numbers using Dedekind Cuts (2022)**: Completed a construction of the Real Numbers from the Rational Numbers using the Dedekind Cuts technique as well as proved various theorems and lemmas necessary for the construction. Formatted the construction as a technical paper

Honors and Awards

- Member of IEEE Eta Kappa Nu Honor Society (University of Michigan chapter)
- James B. Angell Scholar (2023)
- Recieved University Honors and Dean's List for all semesters so far at UofM