Anthony Chen | Curriculum Vitae

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I am a recently graduated BS Computer Science student. Passionate about software & data engineering work/research relating to Machine Learning, Artificial Intelligence, and Data Science with a team with strong technical and interpersonal skills

Previous Employment

- **Smart Information Flow Technologies** **Minneapolis, MN**
  NLP Research Intern *January 2019 - Present*

  Part of two research DARPA projects. One is relating to using word embedding to discover and measure gender bias in texts from different regions. Two research papers in the project was recently submitted. Another is relating to using NLP to detect hostile intent online that could lead to acts of violence.
- **UMN Computer Science&Engineering Department** **Minneapolis, MN**
  Teaching Assistant *January 2018 - Present*

  Currently a teaching assistant for computer science courses. Spring Semester 2018 I was a Machine Architecture & Organization TA. Fall 2019, I was a teaching assistant for Elementary Computational Algebra course. Currently, I am a TA for the Introduction to C/C++ course. My duties included lead weekly discussion on class concepts and code implementation, proctoring/grading exams and assignments, and holding weekly office hours to assist one-one with students.
- **Optum Technology** **Eden Prairie, MN**
  Machine Learning/Artificial Intelligence R&D Intern *June 2018–August 2018*

  I was part of a proof of concept project for a new provider fraud detection method using graph databases and computer vision. Designed and created a graph database to store provider information. This database was run through self-designed queries and social network analysis tools to find fraud rings. These rings or clusters of providers were extracted and displayed into a self built ranking table that can receive verification from fraud experts. The feedback from experts helps reorder the ranking table by adjusting weight parameters through semi-supervised learning. Additionally I added a feature for image recognition of provider's address to address potential fraud. The method for this has impressed the company's business leaders to review it for patent potential.

- **Optum Technology** **Minnetonka, MN**
  Big Data Software Engineer Intern *June 2017 - August 2017*

  I assisted in the company's Data Lake Development Team for Optum's Big Data Platform working as a software engineer in devops. Responsible for the maintenance and development of data infrastructure and analytics through writing SQL/Hive queries, database design, optimize data retrieval, and communicate with business leaders.

Education

Academic Qualifications

- **University of Minnesota** — **Twin Cities**
  3.87/4.0 GPA, B.S. Computer Science, Statistics Minor. — *2016–2019*
  AI&Robotics and Big Data Upper Division Specialty
- **Wayzata High School** — **Plymouth**
  4.2/4.0 GPA, High School — *2012–2016*

Relevant Courses

- Artificial Intelligence I
- Artificial Intelligence II
- Intro to Machine Learning
- Applied Linear Algebra
- Computer Vision
- Intro to Operating Systems
- Program Design & Development
- Regression and Correlated Data
- Practice of Database Systems
- Data Science II
- Theory of Statistics I
- Theory of Statistics II

Academic Projects

- **Transfer Learning NLP Project in Medicine (Ongoing):**
  Working on a new research project with Prof. Serguei Parkhomov that relates to transfer learning of natural language processing methods to be used in the medical space.
- **Swarm Robotics Research:** *'Maximizing Energy Battery Efficiency in Swarm Robotics'*
  Finished a research project that relates to a new energy optimization technique for large-scale swarm robotics. Paper has been accepted to AAMAS 2019 conference as an ARMS workshop paper. Professor advisor is Maria Gini.
- **Problem Solving Alarm Clock App** *'Quizlock Alarm'*
  Made an android app that allows users to set an alarm that will only be unlocked after solving a problem. Can choose from a variety of types of problems such as math, vocabulary, or a specific standardized test exam question.
- **Artificial Intelligence II Final Project:** *'Stock Trading Agent That Utilizes Number of Tweets'*
  My final project for my Artificial Intelligence II project explores the twitter sentiment analysis for prediction of stock price change. Used a metrics approach to see if the number of tweets can predict stock change through a designed agent with Feed Forward Neural Networks. A 12-page research paper was written as a product and is currently available on my website.

Publications

- **Maximizing Energy Battery Efficiency in Swarm Robotics:** *Anthony Chen, John Harwell, Maria Gini* Paper was accepted and presented at the AAMAS 2019: International Conference on Autonomous Agents and Multiagent Systems as an Autnomous Robots and Multirobot Systems (ARMS) workshop paper.
- **Word Embedding Gender Biases Meet Statistical Gender Disparities: A Cross-Cultural Analysis** *Scott Friedman, Anthony Chen, Sonja Schmer-Galunder, Jeff Rye* Paper was accepted to the ACL 2019: Association for Computational Linguistics as a Gender Bias for Natural Language Processing (GeBNLP) workshop paper.
- **Understanding Gender-Bias using Statistical Gender Gaps** *Scott Friedman, Jeffrey Rye, Robert P. Goldman, Sonja Schmer-Galunder and Anthony Chen* Paper was submitted to International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS) 2019.

Technical and Personal skills

- **Programming Languages:** Proficient in: C, C++, Python, SQL, Java, Matlab, R, HTML/JavaScript, TeX, Assembly, Shell.
- **Industry Software Skills:** Tensorflow, Scikit-Learn, PyTorch, Git, Eclipse, Atom, Android Studio, Agile Methodologies, MS Office.

Activities

- **Undergraduate Research Opportunities Conference** Was selected by University of Waterloo for an all expense paid trip to their university to explore and share research experience and opportunities.
- **Robotics & Machine Learning Study Abroad** I participated in a study abroad in Italy to study Machine Learning and Robotics at some of the most prestigious universities in Italy. I also got to attend the IEEE 2018 International Symposium on Circuits & Systems in Florence while I was there.
- **Tau Beta Pi Board Member** I am a board member of the engineering society Tau Beta Pi at the University of Minnesota branch for academically achieving engineering students.