

CONTACT INFORMATION Website: <https://kotstot6.github.io>
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SUMMARY

- A Machine Learning Engineer (MLE) with an MS degree in Computer Science (CS) and two BS degrees in CS and Mathematics. Conducted research in deep learning model robustness as a student at ASU, contributing to two papers published in ICML and ISIT. Gained industry experience as an MLE at Spotify and Wells Fargo, having worked on improving their recommender systems and LLM transaction categorizers, respectively.

EDUCATION **Arizona State University**, Tempe, AZ Fall 2019–Summer 2023

- M.S. in Computer Science, GPA: **4.0** – via 30 credits. (*Fall 2022 - Summer 2023*)
 - Thesis: *Towards Addressing GAN Training Instabilities: Dual-Objective GANs with Tunable Parameters*
- B.S. in Computer Science, GPA: **4.0** – via 50 credits. (*Fall 2019 - Spring 2022*)
- B.S. in Mathematics, GPA: **4.0** – via 51 credits. (*Fall 2019 - Spring 2022*)
- Barrett, the Honors College – Thesis: *A Graph-Based Machine Learning Approach to Realistic Traffic Volume Generation*

EXPERIENCE

- **Machine Learning Engineer Intern** June 2023–September 2023
Spotify – Personalization Mission
 - Proposed a novel dataset filtering method to improve the classification model responsible for playlist personalization; increased percentage of users with long listens by 0.7%.
 - Designed an experiment for Bayesian-optimizing the filtering method, and created a Ray pipeline that reduced the model training runtime from hours to seconds.
 - Contributed to a Kubeflow training pipeline deployed in production for an A/B test.
- **Graduate Research Assistant** August 2022–May 2023
School of Electrical, Computing, and Energy Engineering; Arizona State University
 - Supervised by Dr. Lalitha Sankar of ASU’s Sankar Lab.
 - Focused on the use of alternative objective functions for generative adversarial network (GAN) training in order to help stabilize model convergence and lessen the network’s performance dependency on random weight initializations.
 - Co-authored (α_D, α_G) -GAN: *Addressing GAN Training Instabilities via Dual Objectives*, which was accepted into the 2023 IEEE International Symposium on Information Theory (ISIT) conference and New Frontiers in Adversarial Machine Learning workshop at the 2023 International Conference on Machine Learning (ICML).
- **Machine Learning Engineer (Contract)** June 2022–August 2022
Wells Fargo
 - Developed and trained a deep transformer LLM that classifies transaction data.
 - Designed and implemented a Python web-scraping technique to collect more information from brand names, using the BeautifulSoup library and AWS for IP rotation.
 - Created a visualization technique that combines the word-cloud algorithm with t-SNE clustering, designed to help ML practitioners visualize their text data for classification purposes.
- **Undergraduate Research Intern** April 2021–July 2022
School of Electrical, Computing, and Energy Engineering; Arizona State University
 - Supervised by Dr. Lalitha Sankar of ASU’s Sankar Lab, and funded by *Summer Undergraduate Research Initiative (SURI)* and *Research Experience for Undergraduates (REU)*.
 - First authored *AugLoss: A Robust, Reliable Methodology for Real-World Corruptions*, one of 40 submissions accepted into the Principles of Distribution Shift workshop at the 2022 International Conference on Machine Learning (ICML).
- **Undergraduate Teaching Assistant** August 2020–December 2021
Fulton Schools of Engineering; Arizona State University

- Worked as a TA for *Probability & Statistics for Engineers* (IEE 380) over three semesters.
- Developed [kotstot6.github.io/Hypothesetest](https://github.com/kotstot6/Hypothesetest) to help students with 2-sample hypothesis testing.
- **Instructional Aide** March 2021–December 2021
School of Mathematical & Statistical Sciences; Arizona State University
 - Worked for one *Calculus for Engineers II* (MAT 266) course, one *Elementary Linear Algebra* (MAT 242) course, and two *Math for Business Analysis* (MAT 211) courses.
- **Student Grader** June 2021–December 2021
Arizona State University
 - Graded for 7 *Discrete Math Structures* (MAT 243) courses over two semesters and 1 *Intro to Theoretical Computer Science* (CSE 355) course in Fall 2021.

SKILLS

- **Deep Learning**
 - **Libraries:** PyTorch, Tensorflow, NumPy, Ray, Kubeflow.
 - **Tasks:** Domain adaptation, Image classification, Image generation, Image deblurring, Image-to-image translation, Time-series forecasting, Text classification, Named entity recognition, Recommender systems, Compressive sensing, Clustering, Dimensionality reduction.
- **Machine Learning**
 - **Libraries:** Scikit-Learn, NumPy, Pandas, Pyspark, SparkML, nltk, MATLAB built-ins.
 - **Tasks:** Classification, Regression, Clustering, Association, Recommendation.
- **Data Mining**
 - **Libraries:** BeautifulSoup, Selenium, requests, nltk, Pandas, Pyspark.
 - **Tasks:** Community detection (CPM, Spectral, Modularity), Web ranking (Katz, PageRank), Association rule mining (Apriori), Data transformation (TF-IDF, Word2Vec, GloVe).
- **Data Visualization**
 - **Libraries:** Matplotlib, Seaborn, D3.js, Leaflet.js, HighCharts.
 - **Tools:** Tableau, Power BI.
- **Web Development**
 - **Client:** HTML, CSS, JavaScript, Pyodide, MathJax.
 - **Server:** PHP, SQL, MySQL (GCP, AWS), BigQuery, Node.js, Flask.
- **Miscellaneous**
 - **Languages:** Python, Java, C/C++, MATLAB, Bash, Git.
 - An extensive mathematical background up to the undergraduate level, including advanced calculus, linear algebra, graph theory, and scientific computing.

PUBLICATIONS

- K. Otstot, J. K. Cava, T. Sypherd, and L. Sankar, “Augloss: a learning methodology for real-world dataset corruption,” in *Principles of Distribution Shift*, 2022. [Online]. Available: <https://arxiv.org/abs/2206.02286>
- K. Otstot, “A graph-based machine learning approach to realistic traffic volume generation.” ASU KEEP Library, 2022. [Online]. Available: <https://keep.lib.asu.edu/items/166729>
- M. Welfert, K. Otstot, G. R. Kurri, and L. Sankar, “ (α_D, α_G) -GANs: addressing GAN training instabilities via dual objectives,” in *New Frontiers in Adversarial Machine Learning*, 2023. [Online]. Available: <https://arxiv.org/abs/2302.14320>
- Otstot, Kyle. ”Towards Addressing GAN Training Instabilities: Dual-Objective GANs with Tunable Parameters.” Order No. 30573257, Arizona State University, 2023. <http://login.ezproxy1.lib.asu.edu/login?url=https://www.proquest.com/dissertations-theses/towards-addressing-gan-training-instabilities/docview/2852188427/se-2>.

PROJECTS

- See full project portfolio at <https://kotstot6.github.io/#projects>.

AWARDS

- **August 2022:** Awarded the 1st place prize of \$7500 for winning the 2022 *Wells Fargo Campus Analytics Challenge*, a nationwide ML competition prompting college students to use state-of-the-art natural language processing (NLP) techniques to develop a transaction categorizer.
- **April 2022:** Selected to join ASU’s chapter of *Phi Beta Kappa*, the nation’s oldest and most prestigious honor society for the liberal arts and sciences.
- **December 2021:** Selected to receive the 2021-2022 *Dr. William E. Lewis Excellence in Computer Science Engineering Scholarship* with the approximate amount of \$6199.