

# Azizakhon Mirsaidova

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## EDUCATION

- **Northwestern University** Evanston, IL  
*Master of Science in Artificial Intelligence* September 2021 - December 2022
- **Middle Tennessee State University** Murfreesboro, TN  
*Bachelor of Business Administration in Finance and Data Science* August 2017 - May 2021

## TECHNICAL SKILLS

**Languages:** Python, R, C++, SQL [MySQL, PostgreSQL]

**Frameworks and Libraries:** PyTorch, TensorFlow, Pandas, Numpy, Matplotlib, NLTK, Plotly, Scikit-Learn

**Skills:** Data Science, Machine and Deep Learning, Speech Recognition, Natural Language Processing, Optimization

## EXPERIENCE

- **Tiilt Lab: Technological Innovations for Inclusive Learning and Teaching** Evanston, IL  
*Graduate Research Assistant* November 2021 - Present
  - **Speech recognition:** Building multi channel source separation model using **Transformer** architecture and **SepFormer** by optimizing speech recognition process for **more than 35%** for Blinc platform.
  - **NLP:** Developing topic models using **Latent Dirichlet Allocation**, **BerTopic** to enhance text analysis and visualization.
  - **Paper in Review:** Anderson, K., Eze, T., **Mirsaidova, A.**, Worsley, M. (2023). Understanding How Students Want to Learn to Collaborate using AI. AI in Education for Sustainable Society 2023.
- **Adobe** Remote  
*Machine Learning Engineer Intern Co-Op* September 2022 - December 2022
  - **Segmentation:** Developed a revenue model using Random forest, XGBoost regression methods to improve customer segmentation process using K-means clustering, Gaussian mixtures models.
  - **Automation:** Built and streamlined CDP's Marketing Simulation Engine by automating user data analysis process.
- **University of Washington, eScience Institute** Seattle, WA  
*Data Science Intern* June 2022 - August 2022
  - **Database Design:** Designed database schema and deployed end-to-end database system from scratch using **SQL** and **Python** for Self Sufficiency Standard data.
  - **Time Complexity Reduction:** Optimized data insertion and retrieval process time by over **75%**, **now requiring only 30 minutes from the previous 3-5 hours**.
  - **SSS Package:** Developed and shipped open source Python library to hold Self Sufficiency database.
- **Middle Tennessee State University** Murfreesboro, TN  
*Undergraduate Research Assistant* December 2019 - May 2021
  - **Data Science:** Automated data pipeline processes and built multiple dashboards for tracking Tennessee economy in real-time leveraging Census data using Python and Tableau.
  - **Publication:** Arik, M., Riley, J., **Mirsaidova, A.**, Sumaiya, M. (2021). Shifts in Family Businesses Due to the Covid-19 Pandemic. Global Journal of Entrepreneurship, 153.

## PROJECTS

- **Predicting Answer Categories and Types for Question Answering:** Developing a model using **BERT** architecture with data oversampling via Wikidata achieving accuracy of **98%** in predicting answer categories for Mim companion at C3Lab.
- **Abstractive Text Summarization:** Fine-tuned **T5 transfer learning model** to summarize CNN/DailyMail dataset and achieved a **ROUGE score of 44%**.
- **Conversational Agent:** Implemented Conversational Agent using Transformer's **GPT-2** for text generation on MultiWOZ 2.2 dataset by fine-tuning decoding methods as Beam Search, Top-K Sampling, Temperature Sampling.
- **Linguistic Evaluation of Fake and True News:** Built Named Entity Recognition model to linguistically evaluate differences between machine-generated fake and real news using **NLTK**, **Transformer** models.

## LEADERSHIP

- **Graduate Teaching Assistant:**
  - **MSAI 348 Intro to Artificial Intelligence:** Mentored about 40 students in machine learning topics. (Fall 2022)
  - **MBAI 417 Data and Data Intensive Systems:** Designed the course lab and homework assignments. (Winter 2022)
- **CodePath:** Technical Interview Prep Mentor for Data Structure and Algorithm questions. (Summer 2022)
- **The Code It! Challenge EvanSTEM:** Mentored Evanston middle school students to code Arcade game.(Fall 2021)