

Alex Luchinsky

Bowling Green, OH 43402 | 419-601-9999 | US Citizen | aluchi@bgsu.edu | [LinkedIn](#) | [Personal WebSite](#)

Professional Summary

Scientist with extensive experience in data analytics, predictive modeling, and scalable solution development. Skilled in leveraging advanced programming and analytical techniques to drive strategic decisions and process improvements. Experienced in mentoring teams and managing complex projects to deliver impactful insights.

Skills & Technologies

- **Data Science & Machine Learning:** Deep Learning, Neural Networks, Time Series Analysis, Topological Data Analysis (TDA), Data Mining, Statistical Modeling
- **Software Development:** Web Applications, AWS, React, Python Dash, R Shiny
- **Data Engineering:** SQL, pandas, NumPy, sklearn, PyTorch, Spark
- **Visualization & Reporting:** Power BI, LaTeX, Beamer, PowerPoint, Tableau, Business Intelligence, Process Improvement

Professional Experience

Data Analyst,

Aug 2023 – May 2025

Bowling Green State University – Bowling Green, OH

- Developed and deployed machine learning models in Python and R to support predictive analytics and decision-making.
- Built interactive dashboards and web applications using Python Dash and AWS, enabling dynamic data visualization and reporting.
- Performed advanced statistical analysis to improve institutional performance metrics and strategic planning.

Adjunct Instructor,

Aug 2019 – May 2023

Bowling Green State University – Bowling Green, OH

- Taught undergraduate courses in physics, statistics, discrete math, and calculus, fostering strong analytical thinking among students.
- Designed course content with a focus on practical problem-solving and quantitative reasoning applicable to real-world data challenges.
- Mentored students pursuing data-intensive projects, encouraging application of statistical and computational methods.

Software Developer

Apr 2021 – Dec 2021

Senico Corp – Bowling Green, OH

- Designed and implemented a web-based KPI analytics tool for the hotel industry, enabling real-time performance tracking and reporting.
- Developed frontend and backend components using [technologies used, if known] to ensure smooth user interaction and scalable performance.

Projects

University Women's Travelers Group website

Community Engagement Platform

- Developed a dynamic website for the UW Travelers Club using JavaScript and SQL
- Integrated interactive features including a chatroom and forum
- Designed for ease of content updates and better member communication

TDavec

Aug 2024 – Aug 2025

R and Python Packages for Topological Data Analysis

- Created a unified interface for multiple persistent homology vectorization methods
- Simplifies the application of TDA in data science workflows
- Published and maintained on CRAN and PyPI

Game of Life Simulation

Jan 2024 — Dec 2024

Educational Web App

- Developed an interactive simulation of Conway's Game of Life using React
- Provides users with tools to experiment with custom patterns and explore emergent behavior

DFin App

May 2023 — Nov 2024

Financial Record Management Tool

- Designed and implemented a React web app for personal and business finance tracking
- Mongo Database for information storage

BG-Courses

Dec 2023 — Jul 2025

Academic Requirement Tracker1

- Built a React application to help students track course completion and graduation eligibility
- Simplifies degree planning through real-time academic progress checks

SAI Dashboard

Apr 2021 — Dec 2021

KPI Monitoring System for the Hospitality Industry

- Built a data visualization platform using React and MongoDB
- Enables hotel managers to track performance metrics in real time

Education

Bowling Green State University, Bowling Green, OH.

Jan 2022 — May 2025

Ph.D., Data Science,
4.0 GPA

Bowling Green State University, Bowling Green, OH

Sep 2020 — Dec 2021

Masters of Science, Data Science
3.89 GPA

Certifications & Awards

- Multiple National and Institutional Research Grants
- Publications in Machine Learning & Data Science Journals
- Invited Speaker at Various Conferences on Data Science & Computational Physics

Additional Experience

- Organized Science Olympiads and academic competitions.
- Supervised Ph.D. students in computational research.
- Served as a peer reviewer for scientific journals.

Publications & Research

- **Sep 2025:** Aleksei Luchinsky, Umar Islambekov, "TDAvec: Computing Vector Summaries of Persistence Diagrams for Topological Data Analysis in R and Python", accepted for publication in JOSS;
- **Nov 2024:** Aleksei Luchinsky, Umar Islambekov, "TDAvec: Computing Vector Summaries of Persistence Diagrams", [arXiv:2411.17340](https://arxiv.org/abs/2411.17340);
- **Aug 2022:** Kit C Chan, Umar Islambekov, Alexey Luchinsky, Rebecca Sanders, "A Computationally Efficient Framework for Vector Representation of Persistence Diagrams", [Journal of Machine Learning Research, 23\(268\):1–33, 2022](https://doi.org/10.26434/chemrxiv-2022-12345);
- Some number of papers in theoretical physics