Dhruv Kapur

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Education

University of Michigan Expected Dec. 2025

BSE – Computer Science with Minor in User Experience Design, GPA - 3.77 / 4.00
Dean's Honor List (all semesters)
Relevant coursework: Data Structures & Algorithms, Parallel Programming with GPUs, Computer Security, Web Systems, Computer Organization, Artificial Intelligence, Data Science & Machine Learning

Publications

NeurIPS 2023 - Sen, A., Task, C., **Kapur, D.**, Howarth, G. S., & Bhagat, K. (2023). Diverse community data for benchmarking data privacy algorithms. *Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track*. https://openreview.net/forum?id=1ODvxEwsGk

Experience

NetApp Jun. 2025 - Aug. 2025

Software Engineering Intern

- Developed a Google Cloud NetApp Volumes VS Code extension to streamline interaction with cloud resources
- Integrated Model Context Protocol (MCP) to enable context-aware analysis of cloud resources in chat interface
- Engineered infrastructure-as-code generation workflows, auto-generating Terraform templates for diverse scenarios
- Integrated Copilot LLM into backend services, enabling a custom chat participant for expert-level assistance

University of Michigan Jan. 2024 - May. 2025

Researcher

- Collaborated with postdoctoral researcher at University of Michigan and analyzed deidentification algorithms in depth as a continuation to my NeurIPS report on differential privacy
- Observed features of the privacy-preserving techniques that result in outliers due to noise, and explored reasons for these differences in the balance between utility and privacy

Knexus Research Corporation May. 2023 - Aug. 2023

Research Intern

- Explored behavior of data deidentification in the Collaborative Research Cycle NIST Program
- Evaluated outliers in diverse populations to highlight algorithms that were vulnerable to known privacy issues exemplified in other data analytics and outlined identifiable privacy concerns with outliers
- Analyzed synthetic data in an archive of over 450 deidentified data samples produced by the NIST Diverse Community Excerpts Benchmark Data using Python libraries Pandas and Numpy
- Collaborated with mentor and team to compile findings for NeurIPS 2023 Datasets and Benchmarks Track

Projects

ClashBot - Clash of Clans Discord User Bot github.com/dhruvk19/ClashBot

- Deployed a bot on a virtual private server (VPS) to ensure high availability and secure data storage
- Automated event scheduling using the discord.py API for 300+ users
- Analyzed commands in real-time sent by members and tracked selected options to planned events

Distributed Search Engine

- Built a scalable search engine with separate Index and Search servers to handle concurrent requests
- Processed web documents with a pipeline to construct segmented inverted indices using Hadoop MapReduce logic
- Analyzed retrieval methods like text analysis (tf-idf) and link analysis (PageRank)
- Designed a REST API that handles distributed search queries across index segments using multi-threading

Recipe Rating Predictor - food.com recipe.dhruvk19.com

- Built an ML (scikit-learn) pipeline on 800K records with EDA, feature engineering, and baseline benchmarking
- Optimized a Random Forest Regressor via hyperparameter tuning, improving predictive accuracy

Clubs

Vice President of Operations at Tau Epsilon Kappa (Technological Professional Fraternity), MHackers-ML Team, Michigan Data Science Team

Technical Skills

Languages: Python, C/C++, R, Julia, SQL, JavaScript, TypeScript, Swift, HTML/CSS
Frameworks/Technologies: React Native, SwiftUI, React.js, REST APIs, PyTorch, AWS, Node.js, SQLite, CUDA, Hadoop, Flask, Web Scraping, Git