Maninder (Kaurman) Kaur

✉ maninderkaurtoor1@gmail.com   📞 317-516-8731   🔗 k4urman.github.io   ⌗ k4urman

Education

Purdue University, B.S. in Computer Science, Minor in Mathematics *Aug 2024 – May 2027*
Relevant Coursework: Data Structures & Algorithms, Discrete Math, Computer Architecture
Extracurricular: Autonomous Racing Club VP, CSWN Tech Lead, Autodesk Campus Ambassador

Skills

Programming Languages: C/C++, C#, Java, Python, SQL, JavaScript
Frameworks & Tools: React.js, Node.js, Angular, Git, Jupyter Notebook, PyTorch, Docker, OpenAI API, LangChain

Experience

Scrum Master *Indianapolis, IN*
Corteva Agriscience *Aug 2025 – May 2026*

- Led a team of undergraduate researchers in developing an AI-powered chatbot for Formulation Sciences using **LangGraph, Python, and React**, resulting in a user-friendly tool that streamlined scientific workflows and improved data accessibility.
- Used **Agile processes** to coordinate project timelines, facilitate daily stand-ups, and ensure iterative development, delivering the chatbot on schedule with enhanced collaboration among team members.

Ambassador *Indianapolis, IN*
Autodesk *June 2025 – Dec 2025*

- Organized and facilitated **10+** technical workshops, hackathons, and campus tabling events to promote Autodesk's design and engineering software suite to Purdue students
- Developed educational content and hands-on demonstrations showcasing **Autodesk Fusion 360, AutoCAD, and other platforms**, reaching over **200 students per semester** these events.

Data Science Intern *Indianapolis, IN*
Indiana Fever *Aug 2024 – May 2025*

- Built a **custom basketball archetyping system** that classified players into hyper-specific positions beyond traditional roles, enabling coaches to optimize lineup construction and matchup strategies
- Developed advanced statistical models using **K-Means clustering** and machine learning techniques to analyze player performance metrics across **50+ features** including shooting efficiency, defensive impact, and usage rates
- Collaborated directly with coaching staff and basketball operations analysts to translate complex statistical findings into actionable game-day decisions and strategic recommendations using **pandas, Python, and SQL**

Software Engineer Intern *Fishers, IN*
IoT Lab, Fishers *June 2022 – Jul 2022*

- Organized lab spaces, oversaw **3D printing and laser printing jobs**, and created a passion project
- Conceptualized and developed a Sudoku-inspired encryption algorithm as an independent research project, exploring **number theory** and **group theory**

Projects

American-Canadian Energy Sentiment Analyzer *Oct 2025*

- Scraped and analyzed 5,000+ articles about American-Canadian **using epa.gov API using Python** to quantify possible keywords for sentiment analysis on renewable energy and fossil fuel policies
- Applied **sentiment analysis** algorithms using **Power BI** and statistical modeling to identify significant regional divergences in climate policy discourse, visualizing trends through **a interactive dashboard**

Video-to-Speech Tool for Visually Impaired *2023-24 — Link* ↗

- Built an accessibility tool using **Python and OpenCV** for real-time video processing and object detection, converting visual information into natural-sounding audio descriptions **via Google Text-to-Speech API**
- Designed the wording system to verbalize key visual elements, text, and scene changes for environmental awareness.

Sudoku-Inspired Encryption Algorithm *Jun-July 2022 — Link* ↗

- Developed a novel encryption algorithm leveraging Sudoku puzzle constraints and **number theory principles** to create unique permutation-based transformations for secure data encoding from IoT internship
- Implemented custom key generation and cipher operations in **Python**, exploring the mathematical foundations of **modern cryptographic** techniques through hands-on experimentation.

Comparative Speed Analysis Research Paper *Jun 2023 - 25 — Link* ↗

- Researched the speed disparities between the encryption algorithms AES, Blowfish, and ChaCha20 in a comparative analysis study done alongside a mentor. **Published under JEI Publishing.**