

# Anmol Gulati

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## RELATED EXPERIENCE

### Fluid Sports Tech

San Jose, CA

*Software Engineer Intern*

May 2023 - Present

- Develop and deploy a full-stack mobile and web application utilizing Swift, Python, Javascript, .NET and RESTful APIs, to reach an anticipated user base of over 50,000 student-athletes
- Engineer an AI-powered chatbot that advances athlete communication by delivering targeted messaging and guidance, enhancing access to sports performance and mental health resources

### Informatics Skunkworks

Madison, WI

*Machine Learning Undergraduate Researcher*

May 2023 - Present

- Implement generative machine learning in Python, training a Diffusion Variational Autoencoder to analyze crystal materials' structural properties and detect correlations with desired traits
- Reduces reliance on legacy trial-and-error synthesis methods by developing predictive models for novel materials, in close collaboration with Prof. Dane

### Key Club

San Mateo, CA

*Software Engineer Intern*

September 2018 - May 2021

- Designed and implemented a website using CSS/HTML facilitating student-published volunteering events, resulting in a remarkable 75% increase in community engagement
- Integrated diverse website features, such as event posting, recruitment opportunities, and a social network for organizations, optimizing functionality and enhancing user experience
- Received consistent recognition from the board as the top-performing member

## PROJECTS

### ChatBridge | Java, Multithreading, Socket Programming

June 2023

- Built a multi-client chat application that enables real-time communication between 50+ users using JavaFX
- Created an intuitive UI with interactive chat windows and controls, while incorporating socket programming techniques to handle network communication and message synchronization among clients
- Implemented multithreading to support concurrent connections and enable a seamless chat experience

### A\* Algorithm Pathfinding Visualizer | Python, Algorithms, GUI Development

June 2023

- Developed a Python program leveraging the A\* algorithm, reducing pathfinding time by 50% compared to a brute-force method to facilitate real-time visualization and computation of the shortest path for robot navigation
- Implemented an interactive UI with dynamic grid updates, barrier creation, and start/end node designation, enabling interactive route planning and obstacle avoidance in a virtual environment
- Incorporated priority queues and the Manhattan distance heuristic to optimize pathfinding efficiency

### Pong AI using NEAT | Python, AI Development, Game Development

May 2023

- Created an autonomous pong game by implementing the classic game with an AI player trained using the NEAT algorithm, providing an engaging and challenging gaming experience
- Achieved 100% win rate against human players, implemented features such as playing against an AI-controlled paddle, ability to train the AI to evolve over generations, and testing the best AI model against humans

## EDUCATION

### University of Wisconsin-Madison

Expected Graduation: May 2025

Bachelor of Science, Double Major in Computer Science & Data Science

Coursework: Data Structures, Algorithms, Artificial Intelligence, Machine Learning, Data Programming,

Computer Engineering, Linear Algebra, Discrete Mathematics, Applied Statistics for Engineers, Calculus II

## SKILLS

- **Programming Languages:** Python, Java, Swift, C/C++, JavaScript, React, HTML/CSS, R, MIPS
- **Tools:** Visual Studio Code, Pycharm, Eclipse, Xcode, Git, Docker, IntelliJ IDEA, Jupyter Notebook