

# Jack Kiefer

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## EDUCATION

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- **Carnegie Mellon University** Pittsburgh, PA  
*B.S. in Computer Science, Statistics and Machine Learning* *August 2020 - May 2024*
  - GPA: 3.61/4.0; University Honors

## EXPERIENCE

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- **Independent Game Developer** *April 2024 - Present*
  - Developing a multiplayer chess-inspired battle royale game that combines mini-chess matches with an escalating series of upgrades and boosters to add new dimensions and excitement to traditional gameplay
  - Implementing robust graphics with Unity and client/server multi-player support using Unity Networking through C# scripts
- **Major League Baseball** Boulder, CO  
*Software Engineering Intern - Predictive Gaming* *May - August 2023*
  - Created a microservice from scratch that tracks millions of player interactions with games. This involved building a GCP Spanner database, a PubSub subscription to communicate with other services, APIs to allow for summarization of data, along with unit and integration tests all using a Spring Framework
  - Deployed this new microservice to production within 3 weeks where it continues to have over 100,000 interactions tracked daily. Added a cron job to remove old data to conserve database memory
  - Assisted in the effort to integrate an acquired game, Pickle, into the MLB Play services. Built REST APIs to allow guest users to interact with the back-end service allowing thousands of users to get rewards from playing Pickle
  - Wrote extensive unit and integration tests to accompany the APIs which automatically run upon build in the CI/CD environment. Improved test coverage by 20% for the Pickle microservice
- **Sugarwish** Denver, CO  
*Data Science Intern* *May - August 2021, May - August 2022*
  - Built a neural network using scikit-learn to predict the expected revenue of new corporate account signups. Thus, increasing the accuracy of predicted revenue by a factor of 1.5 over existing methods thereby increasing sales team productivity
  - Created dashboards using SQL queries to give executives important information to help them stay on top of business trends
  - Conserved valuable time for CFO by improving the speed of data summarization by a factor of 1000 using SQL
- **Growth Prospects** Boulder, CO  
*Data Analysis Intern* *May - August 2020*
  - Developed an Excel-based system to track inventory of over one hundred items, eliminating most company stockouts. Additionally, created a dashboard to recommend which inventory is needed to purchase based on inventory stock and predicted usage
  - Increased sales by predicting receivers' birthdays to encourage repeat purchases
- **Magic: The Gathering**  
*Professional Card Player* *2018 - 2020*
  - Achieved rank of #1 Youth Player worldwide in 2019 and 2020
  - Contracted for brand promotion and to write articles on Magic strategy, card analysis, and tournament advice

## PROJECTS

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- **MTG AI:** Designed an OpenAI Gym environment for an AI to learn a simplified version of Magic: The Gathering using multi-agent reinforcement learning. The agent was able to learn complex tactics and defeat a few humans
- **Scrapyard Scramble:** Designed and created a two-player card-drafting game in Python with complex strategy. Implemented a "versus AI" game mode using a minimax algorithm to make the experience more challenging for a single-player
- **FlirtFilter:** Created a web-based messenger app using React HTML, CSS, JS and integrated GPT-3 api to allow for a filter to enhance the tone of communication
- **FeedCMU:** Engineered a web-based application using React and the Google Maps API that displays free/excess food sites near the CMU campus and provides walking directions

## TECHNICAL SKILLS

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- **Languages:** Python, JavaScript, C, C#, Kotlin, Go, SQL, R, SML
- **Technologies:** Google Cloud Platform, TensorFlow, Scikit-Learn, OpenAI Gym, Spring Boot, GitHub, Agile Scrum, GKE, Postman, Linux, JUnit, Numpy, Pandas, JIRA, Unity