# Vitor Freitas

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## Education

**Master of Science in Computer Science** — Missouri State University - Springfield, MO
*GPA: 4.00, Graduate Certificate in Data Science* — *Aug. 2022 – Dec. 2024*
- Thesis: Optimizing Sports Outcome Prediction Through Feature Engineering and Machine Learning (Link)

**Bachelor of Science in Computer Science** — Missouri State University - Springfield, MO
*GPA: 3.95 (Summa Cum Laude), Dean's List: Fall 2018 - Spring 2022* — *Aug. 2018 – May 2022*

## Experience

**Graduate Research and Teaching Assistant** — Aug. 2022 – Dec. 2024
*Computer Science Department - Missouri State University* — *Springfield, MO*
- Conducted cutting-edge research in the field of Machine Learning and Feature Engineering, enhancing predictive models for sports event outcomes.
- Instructed and mentored 100+ students across multiple sections in Computational Thinking and Data Structures labs, fostering their technical proficiency and problem-solving skills.
- Provided academic support and guidance to 500+ students enrolled in various computer science courses, offering tutoring, conducting and grading assessments, and facilitating their learning journey.

**Artificial Intelligence Research Intern** — May 2024 – Jul 2024
*Missouri State University/Remote* — *Springfield, MO*
- Collaborated with a team of researchers on a project focused on analyzing the body language of presenters from recorded presentation videos.
- Analyzed body language from recorded presentation videos using MediaPipe, processing and analyzing over 50 hours of footage with over 95% accuracy.
- Created and fine-tuned motion recognition algorithms using scikit-learn to enhance classification accuracy.
- Documented findings and presented progress using PowerBI, contributing to the project's final report.

**Computer Science Tutor** — Aug. 2021 – May. 2023
*Missouri State University* — *Springfield, MO*
- Provided personalized 1-on-1 guidance to 20+ high school and college students, fostering a deep understanding of complex computer science concepts.
- Tailored tutoring sessions to individual learning styles, resulting in improved grades and increased student confidence.
- Covered a range of subjects including programming languages (C++, Python), data structures, algorithms, software development methodology, and data analysis.

## Relevant Skills

**Technical Skills**: Computer Vision, Data Science, Deep Learning, Machine Learning, Database Management
**Programming Languages**: Python, R, SQL (MySQL, Postgres), HTML/CSS/JavaScript, C/C++
**Frameworks**: PyTorch, Tensorflow, Pandas, NumPy, OpenCV, AWS, Scikit-Learn, Matplotlib, Tableau, PowerBI, Spark

## Projects

**Sports Analytics Prediction System** | *Python, scikit-learn, XGBoost, pandas, NumPy, BeautifulSoup, SQL*
- Developed an advanced machine learning pipeline combining genetic algorithms and ensemble methods to predict game scores across multiple professional sports leagues (NFL, NBA, Soccer), achieving $R^2$ scores of up to 0.82.
- Engineered a weighted historical feature engineering system, improving prediction accuracy by up to 15% and reducing RMSE by 20% compared to baseline models.
- Implemented automated web scraping modules using BeautifulSoup4 to collect and process over 500 GB of game statistics from professional sports reference websites, building datasets with over 40 statistical features per game.

**BlinkTwise - Eye Fatigue Detection System** | *Python, OpenCV, MediaPipe, Flask, SQLAlchemy, Bootstrap, APIs*
- Developed a real-time eye tracking application using OpenCV and MediaPipe Face Mesh that processes 30+ facial landmarks to detect blink patterns and calculate fatigue metrics with 95% accuracy.
- Engineered an adaptive monitoring system that personalizes detection thresholds based on user activity (reading: 1.4-14.4 bpm, conversation: 10.5-32.5 bpm), reducing false alerts by 70%.
- Built a Flask-based web application with SQLAlchemy for database management, enabling user authentication, session tracking, and data-driven insights across 1000+ minutes of monitoring for multiple users.