

Parker Bixby

parkerbixby01@gmail.com | +1 (206) 979-1529 | [linkedin.com/in/parkerbixby/](https://www.linkedin.com/in/parkerbixby/) | github.com/parkerbixby

EDUCATION

GONZAGA UNIVERSITY

Bachelors in Computer Science and Computational Thinking

Aug 2021 - May 2025

Relevant Coursework: Machine Learning in Biomed; Software Engineering; Computer Security; Cybersecurity; Cryptography; Data Science; Database Management; Internet of Things; Linux and DevOps; Design Analysis-Comp Algorithms

PROJECTS

MEDICARE REIMBURSEMENT USING RAG

Aug 2024 – May 2025

- Collaborated with Amend Health, a healthcare company, on an 8-month senior project to develop an AI-powered medical reimbursement pricing system.
- Designed the AI by creating a front end in Vue allowing clients to describe medical products and in response our AI will give a list of correlating CPT codes for the product described, as well as the best reimbursement prices using the Geographic Practice Cost Index.
- Engineered a healthcare-optimized RAG system with semantic search capabilities, processing over 18,000 CPT codes and regional pricing data through an AWS RDS database to deliver accurate medical product classifications and pricing recommendations.

CONNECT 4 AI ALGORITHM COMPARISON

Aug 2024 – Dec 2025

- Developed an artificial intelligence system implementing both Minimax and Monte Carlo Tree Search (MCTS) algorithms to create a sophisticated Connect 4 game engine.
- Formulated a comprehensive evaluation framework to benchmark algorithm performance across multiple board sizes, analyzing key metrics including move computation time, win rates, and memory usage.
- Integrated optimizations including alpha-beta pruning for Minimax and UCT (Upper Confidence Bound for Trees) selection strategy for MCTS, achieving significant performance improvements in computational efficiency.

ALZHEIMER'S DISEASE PREDICTION USING NEURAL NETWORKS

Dec 2024

- Engineered a deep learning system implementing both baseline and advanced neural network architectures to predict Alzheimer's disease from patient biomarkers.
 - Built a comprehensive evaluation framework achieving 87% accuracy, analyzing key metrics including precision, recall, and AUC scores across different model architectures.
 - Utilized optimizations including dropout regularization, batch normalization, and strategic activation functions (ReLU, ELU, SELU), achieving significant improvements in model generalization and prediction accuracy.
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SKILLS

Languages: C, C++, Java, JavaScript, Python

Frameworks & Libraries: Vue.js, Node.js, Scikit-learn, TensorFlow

Teamwork: Agile process, Scrum meetings

Development Tools: Git, Docker Cloud

AI/ML: Retrieval Augmented Generation, Semantic Search, Embeddings

Databases: SQL, Vector Databases, AWS RDS