Braeden Treutel

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Entry level software engineer / machine learning engineer with experience in reinforcement learning research and full-stack web development. Proven ability to build, deploy, and evaluate AI-driven applications.

EDUCATION

Master of Science in Computer Science Expected December 2027
Middle Tennessee State University - Murfreesboro, TN

Bachelor of Science in Computer Science December 2025
Middle Tennessee State University - Murfreesboro, TN

- Graduated Cum Laude (GPA: 3.72)
- Honors: Dean's List, Trustee Scholarship

EXPERIENCE

Graduate Research Assistant (Artificial Intelligence) January 2026 - Present
Middle Tennessee State University - Murfreesboro, TN

- Conducted research and implemented reinforcement learning algorithms with Linear Temporal Logic (LTL) constraints to improve agent safety and policy correctness.
- Collaborated with faculty researchers to explore safe reinforcement learning methods and formal specification-driven agent behavior.

Cashier, Front Service Clerk | Publix Supermarkets - Nashville, TN December 2020 - December 2025

- Trained and mentored 10+ new employees, demonstrating leadership and process standardization skills.

PROJECTS

GenoScript - Pharmacogenomic Decision Support Tool (GitHub) (Live Demo) Next.js, React, TypeScript, MongoDB
Vanderbilt Hackathon (VandyHacks) Winner - Best Use of AI

- Won Best Use of AI out of 30+ teams by delivering a pharmacogenomic decision support tool in 24 hours.
- Integrated Gemini API to parse unstructured PGx reports into structured gene-phenotype data, mapping results across CPIC guidelines for evidence-based prescribing recommendations.
- Implemented a 3-tier color-coded risk flagging system with alternative medication suggestions based on patient genetic profiles, reducing clinician interpretation time.

RepRight - Computer Vision Exercise Form Analyzer (GitHub) React, TensorFlow, ML5, C#/.NET, MySQL

- Developed a real-time exercise form analysis application in 36 hours at HackMT using computer vision and pose estimation to provide instant feedback.
- Trained a TensorFlow computer vision model to classify exercise form quality with 96% accuracy, achieving accurate rep counting and scoring for push-ups.

TrueBalance - Financial Tracking Web Application (GitHub) TypeScript, React, Node.js, MySQL

- Built a full-stack financial tracking application with secure authentication, token-based authorization, persistent data storage, and a RESTful API; deployed on AWS.
- Developed interactive data visualizations and an AI assistant to generate insights from financial data.

SKILLS

Languages: Python, JavaScript, TypeScript, C++, SQL, HTML, CSS
Technologies: React, Node.js, Next.js, Entity, AWS, MySQL, Git, Linux