Yuri Braga

Co-founder, CareFuse — Machine Learning for Clinical Decision Support

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Summary

Seeking a job in automation and machine learning starting January of 2026.

Co-founder applying explainable ML to protect patients from unnecessary procedures. Built calibrated logistic models for TKA vs conservative care with propensity weighting and Bayesian tuning.

Experience

Co-founder & ML Lead Software Engineer — CareFuse (Healthcare AI) (2024–Present)

- Designed dual-arm outcomes (TKA vs conservative) via regularized logistic regression
- Propensity-score weighting; Bayes Search with stratified CV; Platt calibration
- Internal validation: AUC≈0.87 using 50 multi-seed holdout tests; reported 95% CIs for AUC/Brier/ECE.
- FastAPI + Docker service, easily integrated into insurance pipeline; SHAP-based patient reports.

Electrical Engineering Intern — Stanley Black & Decker (DeWalt), Towson, MD (Jun–Aug 2024)

- Designed relay/driver/thermocouple test fixture; automated 3-phase H-bridge soak in embedded C.
- Laid out custom Altium PCB integrating comms & power; cut 4 hours per motor test cycle.

Undergraduate Researcher — CMAR — Marine Autonomy & Robotics, Virginia Tech (Aug 2024–Present)

- Bayesian signal modeling; ROS integration for perception-planning pipelines.

Undergraduate Researcher — TREC Lab — Terrestrial Robotics, Virginia Tech (Aug 2022–May 2024)

- Sensor shield for force acquisition; filtering & calibration routines.
- Brought up CAN messaging and encoder interfaces (quadrature/absolute).

Education

• Virginia Tech — B.S. Computer Engineering (GPA 3.8/4.0), Expected Dec 2025

• Accelerated Master’s (UG-to-MS) coursework; 3 years of undergraduate research (robotics & autonomy)

Skills

• Python (pandas, NumPy, scikit-learn, matplotlib), SHAP; stats (logistic regression, calibration, propensity)

• FastAPI, Docker, Git, Linux; basic ROS; MATLAB; C/C++ (for data capture & integration)

• CAN, SPI, I²C, UART; oscilloscopes/JTAG; Altium PCB; Code Composer Studio; ROS; Qt

Leadership & Awards

• President, ECE Ambassadors — Mentorship and recruiting events

• Fralin Research Fellowship — Undergraduate research excellence