Yuri Braga

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

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Summary

Co-founder applying explainable ML to protect patients from unnecessary procedures. Built calibrated models for joint replacement outcome prediction with propensity weighting and Bayesian tuning.

Experience

Co-founder & ML Lead Software Engineer — CareFuse (Healthcare AI) (April 2025–Present)

- Designed dual-arm outcomes (TKA vs conservative) via regularized logistic regression
- Propensity-score weighting; Bayes Search with stratified CV; Platt calibration
- Internal validation using 50 multi-seed holdout tests; reported 95% CIs for AUC/Brier/ECE.
- FastAPI + Docker service, easily integrated into Epic pipeline; SHAP-based patient reports.
- Web development to display the company's achievements at carefuseai.com

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

- Designed relay/driver/thermocouple test fixture; automated 3-phase H-bridge sequence 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), Aug 2022 - Dec 2025

Skills

- Python (pandas, NumPy, scikit-learn, matplotlib); C/C++ (systems and embedded), Java, bash
- Docker; Git; Linux; AWS; RTOS; FastAPI; MATLAB; SHAP; oscilloscopes/JTAG
- Stats/AI (XGBoost, PSM, NN, RL); CAN, SPI, I²C, UART; Altium PCB; Code Composer Studio; ROS; Qt
- Team management, entrepreneurship, product development, R&D

Leadership & Awards

- President, VT ECE Ambassadors — Mentorship and recruiting events
- Outstanding Graduating Senior (ECE) – [VT News Article](#)
- Fralin Research Fellowship — Undergraduate research excellence