

AYUSHMAAN BELLUM

Robotics Team Captain • Student Researcher • Inventor • STEM Educator

Folsom, CA | bellumayush@gmail.com | +1 (916) 380-9172 | AyushmaanBellum.com | LinkedIn: ayushmaan-bellum-0a5025385 | GitHub: Ayushmaan-PCG | YouTube: ProCoderG

PROFILE

High school student (Class of 2028) who designs and builds working systems — competition robots, a patent-pending health-monitoring device, and software tools people actually use. Captain of VEX Robotics Team 29712C, a World Championship qualifier; author of a peer-reviewed paper on PID control; and instructor to 300+ students in Python and CAD. Started teaching coding on YouTube as ProCoderG in fourth grade — and has been building and teaching in public ever since.

EDUCATION

Laurel Springs School | High School • Class of 2028

AP Computer Science A • AP Computer Science Principles • Game Design 1 • Coding 1

LEADERSHIP

Founder & Captain — VEX Robotics Team 29712C "Cognitaur" | 2023 – Present

- Design, CAD, and program the team's competition robot; lead driver practice and match strategy
 - Built C-PRISM, a sensor-fusion localization system that improved autonomous consistency across matches
 - Think Award, California State Championship — engineering notebook and code documentation
 - Qualified for the VEX Robotics World Championship
- Also: Excellence Award • Skills Champion • Tournament Champion • Amaze Awards

Founder — Cognitaur Innovation Lab | 2025 – Present | Folsom, CA

- Umbrella for robotics, health-tech, and teaching projects — a structure for shipping work and sharing it with other students

RESEARCH

C-PRISM — Localization Framework | 2024 – Present

Cognitaur Probabilistic Runtime Inference & Sensor Fusion Model

- Combines odometry, distance sensors, and a confidence model to estimate robot position during autonomous runs
- Recovery states detect and correct tracking errors mid-match, reducing failed autonomous routines

Peer-Reviewed Publication | Natl. High School Journal of Science

"Zeroing In: The Power of PID in Next-Gen Robotics" — PID control applied to precision motion in competitive robotics

INVENTIONS & PROJECTS

Dermalytix — Co-Inventor | 2024 | Patent-Pending

- Sensor-based system that monitors pressure points and flags pressure-injury risk before wounds develop
 - Built the companion mobile app for real-time readings and alerts
- Conrad Global Challenge — Conrad Innovator (2026) • Featured on CBS Good Day Sacramento

QRHealthX — Founder | 2024 | Health-Tech

- OCR and NLP turn hospital discharge paperwork into plain-language patient instructions
- Recognized at a congressional reception for student STEM innovation

SunShiftAI | Code for Impact Hackathon — 1st Place

- Hackathon-winning software project built for the Code for Impact challenge

Gravitrack Orb — CAD Design | 2024 | RECF Challenge

- Placed 3rd worldwide for the design of a competition game element

Earlier Projects | 2022 – 2023

- RoboPyl: tabletop robot that reminds users and dispenses scheduled medication — early assistive robotics
- Peer Guard: student wellness app prototype focused on peer-pressure awareness

TEACHING & COMMUNITY

Student Instructor — Python & CAD | 2023 – Present | Folsom, CA

- Teach Python and CAD to middle and high school students; contributed to the course curriculum
 - 300+ students taught across 70+ instructional hours per year
 - Launched ProCoderG, a coding-tutorial YouTube channel, in fourth grade — monetized within its first year
- Presidential Volunteer Service Award — Gold

TECHNICAL SKILLS

Programming: Python • C++ • VEXcode / PROS • LemLib

Robotics: Autonomous Navigation • PID Tuning & Odometry • Sensor Fusion • Embedded Systems

Engineering: CAD & Mechanical Design • Rapid Prototyping

Software: OCR / NLP • Computer Vision • Mobile App Development

PUBLICATIONS

"The 'It Worked Yesterday' Mystery: The VEX Programmer's Survival Guide" — troubleshooting guide for student robotics programmers
"Robo, Roll Over!" — children's book introducing robotics through storytelling
"Zeroing In: The Power of PID in Next-Gen Robotics" — peer-reviewed, NHSJS

HONORS

- VEX World Championship Qualifier
- Conrad Global Challenge — Conrad Innovator (2026)
- 1st Place — Code for Impact Hackathon (SunShiftAI)
- 3rd Place, Applied Engineering — California Regional STEM Competition (2026)
- Presidential Volunteer Service Award — Gold
- Think Award — CA State Championship
- 3rd Place Worldwide — RECF CAD Design Challenge
- Congressional recognition — student STEM innovation
- Excellence Award (VEX) • Skills & Tournament Champion (VEX)
- City of Folsom Resolution of Commendation
- Multiple Amaze Awards (VEX)

MEDIA

Straight Arrow News — "What Happens When the Traditional Teen Job Disappears?" (Cost of Living, June 2026) — featured as a health-tech founder, patent-pending inventor and STEM mentor
CBS — Good Day Sacramento — interviewed about the team's Worlds qualification and Dermalytix
Folsom Times — "Folsom Student Earns Global Honors for AI-Driven Healthcare Innovation" (Mar 2026)
Folsom Times — "Folsom Robotics Team Earns Think Award, Advances to World Championship" (Mar 2026)
Folsom Telegraph — "Folsom-Area High School Robotics Team Wins Big at State Championship"
RECF Student Spotlight — "From Quiet Curiosity to Confident Innovator."
Also: RECF Newsletter and regional CA outlets

INTERESTS

Robotics Research • Healthcare Technology • Human-Centered Design • Entrepreneurship • Teaching & Mentorship