

Arvin Karve
arvin.karve@gmail.com

EDUCATION

North Carolina School of Science and Mathematics (NCSSM) Durham, NC

GPA: 4.92 (UW) August 2025 – Present

Relevant Courses: Materials Chemistry, Linear Algebra, Machine Learning, Combinatorics and Game Theory, Physics Core: E&M Math Intensive, Organic Chemistry

Cape Fear Academy Wilmington, NC

GPA: 4.0 (UW) August 2021 – May 2025

Relevant Courses: AP Chemistry, AP Biology, AP Physics C: Mechanics, AP Calculus BC, AP Statistics, Multivariate Calculus and Differential Equations, AP Computer Science A: Java

EXPERIENCE & LEADERSHIP

Core Defenses(Formerly Covert Defenses)

Software Engineering Consultant November 2025 – Present

Spearhead software development projects involving data processing, algorithm implementation, performance analysis, and applied machine learning. Design and implement systems for efficient data encoding and signal integrity. Deploy processing workflows on cloud-based servers and containerized environments to support scalable execution.

Hexadecimal Forest

Founder & Lead Engineer January 2026 – Present

Lead development of websites, social media infrastructure, fundraising systems, and other digital solutions for organizations and initiatives. Design and implement technical solutions tailored to organizational needs while managing projects from conception through deployment. Build relationships with international organizations, communicate with prospective partners, and develop cross-organizational collaborations and fundraising opportunities.

BinaryTree

Director of International Partnerships and Education August 2025 – Present

Develop digital literacy and entrepreneurship programs for underserved communities across Africa. Lead organizational operations and partnership development while contributing to fundraising efforts to establish computer lab infrastructure. Expand relationships with international schools and organizations to broaden program reach.

FIRST Robotics Competition — Cape Fear Academy & NCSSM

Team Member & Electrical Lead August 2023 – Present

Lead the electrical subteam, overseeing wiring, circuit design, and system integration for competition robots. Contribute to mechanical design, fabrication, and assembly across multiple build seasons. Participate in drive team operations during competitions, applying real-time decision-making and coordination under pressure.

Schoolhouse World

Senior Tutor February 2023 – Present

Facilitate SAT Math classes and design AP Chemistry and AP Calculus preparation courses. Mentor and train new tutors in course design and teaching methods while developing instructional materials for advanced STEM subjects.

Chemistry Club, Cape Fear Academy

Founder & President August 2024 – May 2025

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Established and led a student organization promoting hands-on experimentation and deeper understanding of chemistry. Organized STEM outreach sessions for elementary students featuring live demonstrations and experiments.

SAATH — Competitive Indian Fusion Dance Team, NCSSM

Leadership Team Member August 2025 – Present

Contribute to event planning, community outreach, and organizational development. Develop practice schedules and leadership plans to support team preparation and performance.

Cape Fear Academy

Summer Assistant Summer 2025

Supported summer programs in engineering, chess, and chemistry. Collaborated with instructors on lesson planning, project execution, and supervision of younger students.

Mercy Trips International

Medical Mission Volunteer Summer 2023

Collaborated with Mercy Trips International to assist at rural medical clinics. Organized supplies, shadowed healthcare workers, and participated in daily outreach operations.

SKILLS & INTERESTS

Technical: Python (pandas, matplotlib, machine learning, data analysis, automation, visualization); Java (object-oriented programming, software development); Web Development; Cloud Computing; Signal Processing

Languages: Fluent in Marathi and Spanish; Conversational in Hindi

AWARDS & HONORS

National Chemistry Olympiad Qualifier | 2025 National Merit Qualifier | AP Scholar with Distinction | National Piano Guild National Winner (2023, 2024, 2025) | National Spanish Exam: 1 Gold Medal, 2 Silver Medals, 1 Bronze Medal