

Robert Barkalov

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TECH SUMMARY

- **Front-end Development:** React.js, Next.js, JavaScript, TypeScript
- **Back-end Development:** Node.js, Postgres
- **Web Technologies:** HTML5, CSS3, RESTful APIs
- **Machine Learning:** Google Teachable Machine, ChatGPT API Integration
- **Programming Languages:** Python, Ruby
- **Libraries/Tools:** Chart.js, Taipy, Git

WORK EXPERIENCE

- **Teacher Assistant for Art of Problem Solving, Morrisville, NC (July 2025 - July 2025)**
 - Supported instruction for multiple math courses including 5th Grade Math and 7th-8th Grade Algebra 1 classes
 - Managed classroom environment and facilitated student engagement to maintain focus during instructional sessions
 - Served as lead instructor for the second half of each class, independently delivering lessons and guiding students through challenging mathematical concepts
- **Teacher for Code Wiz Durham, Durham, NC (June 2025 - Present)**
 - Led hands-on STEM summer camps focused on creative technology and robotics for elementary and middle school students
 - Taught Minecraft Modding camp, guiding students through designing and building custom mods, which includes the designing, coding, and building, these mods, using MCreator and Blockbench software
 - Led LEGO SPIKE Robotics camp, introducing students to basics of robotics, engineering, and block-based programming
- **Teacher Assistant for Wize Computing Academy®, Cary, NC (March 2025 - Present)**
 - Managed the deployment, collection, and organization of all tablets and laptops used by students during each session, ensuring equipment accountability and preventing loss or damage
 - Provided individualized support and guidance to students in understanding robotics concepts, troubleshooting building challenges, and developing coding skills using Lego robotics kits
 - Facilitated a positive and collaborative learning environment by proactively guiding student interactions and addressing behavioral challenges to ensure focused engagement in robotics activities
- **Volunteer Python Tutor for Kidz Code, Remote, (June 2025 - Present)**
 - Volunteer tutor for a nonprofit organization providing free one-on-one Python programming lessons to elementary and middle school students.
 - Follow a structured curriculum to teach fundamental coding concepts and computational thinking skills.
 - Use Replit for live coding and real-time collaboration with students over Zoom.
 - Adapt teaching methods to individual learning styles, providing personalized support and fostering student engagement in STEM.

HACKATHONS

- **University of Maryland, BitCamp 2025 - [Link to app](#)**
 - Developed subpoenaAI.tech, an AI-powered web application using Gemini API to simplify legal tasks including Terms of Service simplification, Small Court Claims guidance, Landlord-Tenant Rights explanation, and Traffic Ticket summarization
- **Panther Creek High School, ScrapYard RTP 2025 - 1st Place Winner - [Link to GitHub](#)**
 - Built "YouTube Chaos Extension," a Chrome extension that injects humorous disruptions into YouTube viewing experience with random muting and unexpected video switching
- **Georgetown University, HoyaHacks 2025 - [Link to app](#)**
 - Worked with a team to create "Code Stars," a Kahoot-style coding education game with Google Gemini API integration for generating customizable coding questions and Supabase backend for real-time gameplay.
- **North Carolina State University, Hack_NCState 2025 - [Link to GitHub](#)**
 - Worked with a team to build a customizable navigation platform using React and Google Maps API with real-time location tracking, device orientation integration, and custom theming system.
- **Capital Charter High School, Washington DC / Counterspell DC 2024 - 1st Place Winner - [Link to app](#)**
 - Developed browser-based game using TypeScript, Next.js, and Canvas API with physics simulation, character collision detection, and smooth animation system
- **Stevenson High School, Chicago, Windy City Hacks 2024 - [Link to app](#)**
 - Created NextJS fitness app integrating Strava API with AI training system for personalized running plans, social features, and e-commerce integration
- **University of Maryland, BitCamp 2024 - [GitHub link](#)**
 - Built data analysis platform examining Hurricane Katrina's impact on real estate prices with Chart.js visualizations and disaster simulation mini-game

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➤ **Boston, Wonderland 2024** - [Link to GitHub](#)

- Developed AR object detection game using JavaScript and Google Teachable Machine with real-time multiplayer scoring and camera-based object recognition

➤ **Georgetown University, HoyaHacks 2024** - [Link to GitHub](#)

- Created Python-based image metadata modification tool using Taipy framework for editing location, device, and temporal image metadata

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➤ **NightHacks 2023**

- Built AI fitness assistant integrating ChatGPT API for personalized workout generation with custom meal planning algorithm and goal tracking system

➤ **WaffleHacks 2023** - [Link to Replit](#)

- Developed web-based nutrition planning tool with database integration for fast food options and healthy recipe alternatives

TRAINING / CERTIFICATION

➤ **Codecademy Certifications**

- Full-Stack Engineer Career Path - [Link to course](#)
- Back-End Engineer Career Path - [Link to course](#)
- Ruby on Rails Course - [Link to course](#)
- Ruby Course - [Link to course](#)
- Advanced Python 3 Course - [Link to course](#)
- CSS Course - [Link to course](#)
- HTML Course - [Link to course](#)
- Intermediate Python 3 Course - [Link to course](#)

EDUCATION / LEADERSHIP / ACTIVITIES

➤ **Ravenscroft High School** | 2021-2025

- Co-President of Computer Science Club at Ravenscroft High School for one year
- AP Computer Science A: Score 4
- AP Calc BC: Score 4