Zack Murry

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EDUCATION

University of Missouri — Columbia, MO
Bachelor of Science in Computer Science and Mathematics — *Aug. 2023 – May 2027*
- 4.0 GPA Honors student in dual degree program
- Volunteer at local FIRST robotics competitions and STEM youth programs

Central High School — Springfield, MO
International Baccaluareate (IB) Diploma — *Aug. 2019 – May 2023*
- 4.0 GPA, 36 ACT, 41/45 points in IB Diploma

EXPERIENCE

Software Research Intern — May – August 2024
University of Chicago — *Chicago, IL*
- Designed and implemented a distributed system on 6 Raspberry Pis to measure rural wireless network speeds across 5G radio links using the NSF-funded Agricultural and Rural Wireless testbed
- Deployed Hadoop cluster on 5G devices using Docker and Kubernetes to compare performance with wired clusters
- Integrated GPS-based time synchronization to ensure sub-microsecond error, increasing precision by 4,000x
- Created a publisher-subscriber data collection/visualization pipeline with Mosquitto, InfluxDB, and Grafana

Undergraduate Research Assistant — Aug. 2023 – Present
University of Missouri — *Columbia, MO*
- Planned and executed realistic drone experiments on last-mile package delivery and resilient video streaming protocols using a remote drone testbed
- Trained Deep Q-Network RL models to find optimal truck-drone delivery routes with PyTorch and Gym
- Created portable and reproducible experiments using infrastructure-provisioning Jupyter Notebooks and Docker
- Co-authored published papers at IEEE INFOCOM and International Conference on Supercomputing workshops

International Business Immersion Intern — Jan. 2023 – July 2023
Askinosie Chocolate — *Springfield, MO*
- Studied direct trade, profit sharing, and intercultural business first-hand in Tanzania cocoa farming cooperatives
- Worked with Brewer Science to collect and inventory soil, cocoa bean, and water samples for toxic metal testing

PROJECTS

Docs Hotkey | *TypeScript, React, Next.js* | `docs-hotkey.zackmurry.com`
- Developed an open-source Chrome extension for adding custom keyboard shortcuts to Google Docs
- Implemented complex document-object model (DOM) interaction for 15+ features and matching documentation
- Over 4,000 weekly active users and a five-star rating with over 40 reviews

Nodecode | *C#, TypeScript, React, Kotlin, Spring*
- Worked with a partner to create a visual, compiled programming language for beginners using a node structure
- Created a complex LLVM compiler with 20+ types of statements, including classes, arrays, and system calls
- Implemented and deployed a responsive package management and documentation site using React.js and Spring
- Placed 5th nationally in the Technology Student Association Software Dev. competition of 500+ competitors

ChesSRS | *TypeScript, React, Kotlin, GraphQL, Spring*
- Adapted spaced-repetition system (SRS) flashcard method to studying chess openings through responsive web app
- Created an interactive chessboard with global state management using React Redux and a GraphQL backend
- Integrated with Lichess API to import users' previous games for analysis and for OAuth2 single sign-on (SSO)

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, C++, Kotlin, C#, C, HTML, CSS, Bash
Tools: Java Spring, Docker, React (Next.js, Remix, and Redux), Linux, LLVM, NGINX, SQL, Git