

# Zack Murry

(417) 350-6553 | [zjmfr@missouri.edu](mailto:zjmfr@missouri.edu) | [zackmurry.com](http://zackmurry.com) | [github.com/ZackMurry](https://github.com/ZackMurry)

## EDUCATION

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### University of Missouri

Aug. 2023 – May 2027

*B.S. Computer Science and Mathematics, Honors*

GPA: 4.0/4.0

- Relevant coursework: Advanced Algorithm Design, Databases, OOP, Differential Equations, Digital Logic
- Volunteering: at local FIRST Robotics tournaments and weekend STEM programs for K-8 students

## EXPERIENCE

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### Undergraduate Research Assistant

Aug. 2023 – Present

*University of Missouri*

*Columbia, MO*

- Designed and conducted realistic drone experiments on last-mile package delivery and resilient video streaming protocols using a physical drone testbed and a simulated digital twin
- Trained Deep Q-Network RL models to find optimal truck-drone delivery routes with PyTorch and Gym
- Created portable and reproducible experiments using Infrastructure as Code (IaC) with Jupyter and Docker
- Co-authored published papers at IEEE INFOCOM and International Conference on Supercomputing workshops

### Software Research Intern

May – August 2024

*University of Chicago*

*Chicago, IL*

- Planned and built 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

### Contract Software Developer

April – May 2024

*Godoco*

*Remote*

- Worked alongside the CEO and experienced engineers in a dynamic startup environment to improve feature development and meet project milestones
- Designed and implemented a responsive toolbar for an LLM-based document editor using Figma, React.js, TypeScript, and Slate.js to enable intuitive text formatting
- Integrated the LanguageTool API to develop an automated spelling and grammar checker with in-text feedback

## PROJECTS

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### Nodecode | *C#, TypeScript, React, Kotlin, Spring*

- Created a visual, compiled programming language for beginners using a node structure with a partner
- Engineered an LLVM-based compiler with 20+ statement types, including classes, arrays, and system calls
- Implemented and deployed a responsive package management and documentation site using React.js and Spring

### Docs Hotkey | *TypeScript, React, Next.js* | [docs-hotkey.zackmurry.com](https://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 5,000 weekly active users and a five-star rating with over 50 reviews

### 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

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**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