Raphael Forward

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EDUCATION

SOUTHERN METHODIST UNIVERSITY (SMU), Lyle School of Engineering Dallas, TX
B.S. in Computer Science, *2024 Recipient of the Sally Blum Memorial Prize in Engineering* *December 2024*

TECHNICAL SKILLS

Languages: JavaScript, Python, C++, HTML, CSS, Swift, SQL, C, Assembly, Java
Frameworks/Libraries: React, Node.js, Express, JWT, REST APIs, OpenGL
Tools/Platforms: Git, Figma, Xcode, Visual Studio Code, Jira
Relevant Coursework: Data structures, Algorithms, Databases, UI/UX, Software Engineering, AI, Cybersecurity, Linear Algebra, Computer Architecture, Operating Systems, Networking, Object-Oriented Programming

SUMMARY

Recent graduate with hands-on experience designing, developing, and deploying full-stack web applications. Background in React, Node.js, Python, and MySQL with a focus on building interactive products and solving real-world problems. Passionate about shipping polished, user-focused experiences and learning new technologies.

PROJECT EXPERIENCE

FANTASY BASEBALL WEBAPP — *TopStat Fantasy www.topstatfantasy.com*
Individual Project
- Built a full-stack fantasy baseball web app using React, Node.js, and MySQL focused on single-stat leagues (e.g. home runs, strikeouts) for MLB
- Designed a responsive, user-friendly frontend with intuitive interfaces for roster building and league management
- Implemented secure user authentication with JWT and email verification, along with comprehensive league and team management features, including private leagues with invite codes and password protection
- Engineered automated league-wide daily stat syncing using a scheduled Cron job and the Tank01 API
- Designed a scalable MySQL schema and intuitive interfaces for roster building, stat leaderboards, and league configuration

LOCKHEED MARTIN SENIOR DESIGN PROJECT
Team Project
- Collaborated with a multi-disciplinary team to design and build a mechanical robotic fixture for securing F-35 aircraft components during inspection
- Led the electrical and programming aspects of the project, using an Arduino microcontroller and C code to control three motors based on user input from a keypad
- Participated in weekly sprint meetings with a Lockheed Martin Fellow and SMU professor
- Designed and implemented testing and failure-handling protocols to ensure system reliability and performance

DALLAS 311 PROJECT
Individual Project
- Reimagined the UI/UX of the City of Dallas's 311 mobile app with Swift and Xcode, using user-centered design and accessibility principles
- Conducted comparative user testing (40 participants), revealing improved navigation ratings (+0.4/5) and reduced crashes
- Designed custom category icons in GIMP to improve visual clarity and accessibility
- Reduced category redundancy by 21%, optimizing the app's menu tree using breadth-over-depth HCI strategies

CUSTOM NYT STRANDS GAME GENERATOR — *Play-Strands playstrands.vercel.app*
Individual Project
- Designed and developed a fully playable clone of the NYT games "Strands" with a custom React frontend and dynamic gameplay UI
- Developed a Python-based puzzle generation engine using DFS and BFS pathfinding to create randomized, solvable word boards
- Engineered a REST API in Node.js/Express to handle game logic, saving, and retrieval of puzzles from a MongoDB database
- Implemented support for daily puzzles and sharable, user-created puzzles

HOBBIES/INTERESTS: Chess, Tennis, Soccer, Reading, Web App Development, Immersive Tech (VR, Metaverse)