Jesse Mack
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TECHNICAL SKILLS

- **Languages**: PHP, Javascript, Node.js, SQL, Python, JSON, HTML, CSS
- **Frameworks**: React, Express, Socket.io, MongoDB, Prisma, jQuery, AJAX, tRPC, Astro
- **Tools**: Linux, Git, TypeScript, SASS, Apache, Nginx, CI/CD, REST API, Unit Testing

EXPERIENCE

- **Software Engineer (Freelance)** — 2019 - Present
  - Decreased SQL database query times by 20% by optimizing field indexing
  - Improved overall performance by 25% by refactoring existing code to be more efficient
  - Developed Python scripts to automate data fetching and database table creation
  - Created an administrator dashboard with PHP, JavaScript, and MySQL to analyze site and user statistics
  - Utilized websockets to implement live-updating of product metrics and analytics
  - Developed a forum with React, Express, and MySQL, supporting threads, posts, and user authentication
  - Set-up Apache and Nginx configurations to handle server routing
  - Implemented unit tests to catch bugs and test code prior to being shipped
  - Created and maintained in-depth documentation of installation processes and features

VOLUNTEER EXPERIENCE

Software Developer at The Pokemon Kingdom — February 2017 - Present

- An up-to-date online Pokemon RPG with 44,000+ members and 300,000,000+ pageviews. — View Website

  PHP, TypeScript, JavaScript, jQuery, Python, MySQL, Nginx, GitLab, CI/CD
  - Discovered and swiftly patched over 100+ bugs, including SQL injection and XSS vulnerabilities
  - Improved general load times by 20%+ by optimizing database field indices and SQL queries
  - Received over $750.00 USD from member donations since 2017
  - Designed and developed new features from the ground up, such as the extensive Achievement system
  - Maintained communications with the active player-base for general relations and feedback purposes

PROJECTS

Aetherim - Unity Modding Framework — January 2023

- A C++ wrapper for accessing the Unity engine's IL2CPP methods during run-time. — Source Code

  C++, Premake
  - Provides a wrapper allowing easy use for working with IL2CPP images, classes, methods, and fields during run-time
  - Exposes many of the Unity's IL2CPP methods for access during run-time
  - Utilizes Premake to generate necessary IDE project files for compilation

Pokemon Absolute — 2020 - Present

- An online Pokemon RPG with in-depth battling, trading, map exploration, and more. — Source Code

  PHP, JavaScript, jQuery, Python, MySQL, SCSS, CI/CD, Apache
  - Utilized Python to scrape PokeAPI and fill out the SQL database with 1100+ Pokemon species, 800+ battle attacks, and 600+ items
  - Strengthened DevSecOps by implementing a permissions system to manage user access to critical functionalities
  - Utilizes a continuous integration and deployment pipeline to sync the repository with the server
  - Implemented an administrative panel to display and allow management of database information
  - Engineered an extensive custom battle system using object-oriented programming practices
  - Utilized Phaser.js to create an open-world map engine that allows exploring custom Pokemon maps
  - Developed a real-time chat system displayed in-game through the use of websockets in TypeScript
  - Created a Discord server bot that allows communication and interaction with the game server