Tyler D Jones

Contact Information

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Work Experience

FFmpeg

Google Summer of Code Participant – Vorbis Encoder **Feb 2017 – August 2017**

Improved the encoding quality and speed of FFmpeg's native Vorbis encoder by redesigning major components and implementing a new psychoacoustic model.

- Built a custom psychoacoustical model capable of detecting transient signals and dynamically switching encoding modes.
- Implemented noise normalization to generate a gaussian noise profile and rewrote residue encoding to minimize quantization error.
- Rewrote the stereo coupling to dynamically switch between various lossy and lossless modes.
- Added foundational support for arbitrary channel mappings.

Other Projects

Project Armoire

Building a custom homework and test grader for computer science faculty at Colorado Mesa University. Students are able to submit assignments and receive feedback that mimics a TDD workflow.

- Using docker to enable a safe and scalable infrastructure for code compilation and execution in sandboxed environments.
- Designing the backend codebase to suport native desktop and in-browser web clients.

Multipong

Built a real-time multiplayer pong arena game for the web browser using Flask and websockets.

- Built a system capable of handling hundreds of concurrent games.
- Maintained game-state synchronization between an arbitrary number of game servers using Redis and MongoDB.
- Implemented custom latency correction logic and anti-cheat mechanisms to ensure game integrity.

re-mark

Built a website that allows users to annotate any page on the internet and store their own comments.

- Built a REST API in Go for managing user-supplied data in MongoDB.
- Utilized xxHash and gzip to cache external pages for users in a safe and memory efficient manner.
- Integrated Google's OAuth API for user authentication.

College Education

Colorado Mesa University, Grand Junction, CO

B.S., Computer Science GPA - 4.0 **Aug 2014 – May 2018**

Colorado School of Mines, Golden, CO

Chemical Engineering GPA - 3.83 **Aug 2015 – May 2016**

Received recognition for developing a simulation engine for municipal waste reactors that could be embedded within existing data work-flows for energy companies and researchers.

Technical Skills

Languages: Python, Go, Javascript, C#, C++, C
Web Technologies: Node, React, Websockets, Express, Flask, HTML5/CSS
Other Knowledge: SQL (PostgreSQL, MySQL), MongoDB, PostGIS, Redis, Docker