Tyler D Jones

Contact Information

Phone: (970) 261-9425 Email: tdjones879@gmail.com Github/Gitlab: tjones879

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

Flying Drone

Built a semi-autonomous drone from bare components and developed an off-machine flight controller.

- Utilized radio communication for transmitting flight directions and data between an embedded linux device and embedded microcontroller.
- Implemented custom PID controls to maintain flight stability using on-board sensor data.

Radio Com

Built an embedded device capable of interfacing with Linux devices and Android phones for communicating over long-range encrypted radio.

- Developed a secure and error-resistant protocol for communication over USB and over LoRa radio.
- Developed a cross-platform C++ application and GUI for end-to-end encrypted communication.
- Wrote linux drivers to emulate a virtual serial port that supports data and control requests over USB.

re-mark

Built a website that allows users to annotate any page on the internet with persistence.

- 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 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: C, C++, Python, Go, C#
Architectures: ARM, AVR, PIC, x86
Tools: Git, Sparse, Valgrind, GCC/LLVM
Protocols: LoRa, USB, SPI, I2C, TCP/IP
Other Knowledge: Kernel Development, Embedded Linux, SQL, Docker